

# **Information and Communication Technology for the Poor**

*An analysis of the ICT to the poor policy in South Africa*

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## Abstract

This thesis is a case study of the pro-poor part of the Information Communication Technology (ICT) policy in South Africa. It utilizes government policy documents and interviews with bureaucrats to understand the pro-poor intentions of the ICT policy and the tools and structures chosen to achieve them. It found that the intentions were to provide ICT services to poor communities in telecentres, households and schools. To achieve this three implementation channels were established: (i) the telecentre channel, which consisted of a Universal Service and Access Agency in charge of paying subsidies from a Universal Service And Access Fund to establish telecentres; (ii) the market channel, which consisted of an independent regulator in charge of issuing and enforcing universal service obligations to ICT companies to provide access to ICT in households and schools; and (iii) the education channel, which consisted of a structure within the provincial Department of Education aiming to provide ICT to schools.

This thesis then uses data collected from fieldwork in three poor communities in KwaZuluNatal to assess and explain the results of the three channels on the ground. Despite political backing and significant funding the policy was only partially successful. The telecentre and market channels were largely unsuccessful, while the education channel was relatively successful. It is argued that the variation in results can, to a large extent, be explained by differences in the tools and structures that were utilized by the channels. The two less successful channels were both centralized at the national level and relied on third parties – which they found difficult to control – for implementation at the local level. The education channel, on the other hand, relied on direct delivery through a decentralized bureaucracy. This thesis provides tentative but empirically founded support to the argument that direct tools, which rely on hierarchic bureaucracies, tend to be easier to implement and more effective than indirect tools relying on third parties. This might be particularly true in context of South Africa, where state institutions lack the capacity to manage indirect tools that rely on complex implementation structures.

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# List of Abbreviations

ANC - African National Congress

DoC – Department of Communications

DoE – Department of Education

ECA - Electronic Communications Act 2005

ECT – Electronic Communications and Transactions Act 2002

GCIS - Government Communication and Information Services

GEAR - Growth, Employment and Reconstruction macro economic strategy

ICASA – Independent Communications Regulator of South Africa (previously SARTRA)

ITU – International Telecommunication Union

ISAD plan – Information Society and Development Plan

KZN – KwaZulu-Natal

PDoE - Provincial Department of Education

PNC on ISAD – Presidential National Commission on the Information Society

RDP - Reconstruction and Development Program

SATRA – South African Telecommunications Regulatory Authority (Later renamed ICASA)

TCA -Telecommunications Act of 1996

TCAA - Telecommunications Amendment Act 2001

USA – Universal Service Agency (later USAASA)

USAASA – Universal Service and Access Agency of South Africa (previously USA)

USF – Universal Service Fund (Later USAF)

USAF – Universal Service and Access Fund (Previously USF)

USOs – Universal Service Obligations

# 1. Introduction

Castells (2000) argues that we have entered into a new era, the 'Information Age'. In this epoch 'information technology and the ability to adapt to it and use it, is the critical factor in generating and accessing wealth, power and knowledge' (ibid:92). Consequently, people and areas

that are non-valuable from the perspective of 'information capitalism' and that do not have significant political interest for the power that be, are bypassed by flows of wealth and information, and ultimately deprived the basic technological infrastructure that allows us to communicate, innovate, produce, consume and even live, in today's world (ibid:72).

Hence, the lack of access to information and communication technology (ICT) is one of the most serious deprivations of our time.

Africa has been largely excluded from the technology revolution that brought about the Information Age. Sub-Saharan Africa ranks at the bottom of the world regions on the International Telecommunication Union's (ITU) ICT Development Index, which measures access to, skills and usage of ICTs. In 2007 less than 5% of the African population used the internet compared to 15% in Asia and 43% in Europe (ITU 2009:4). South Africa is, however, often seen as the exception in sub-Saharan Africa (Castells 2000) and is the highest ranking African nation in the ICT Development Index (ITU 2009).

In order to grasp the situation in South Africa it must be understood that although it is a unitary state, as a result of apartheid, it encapsulates both developed and developing societies. In this sense it is a mesocosm of the world. There are enormous disparities in wealth, power and information between the previously advantaged white urban elite and the previously disadvantaged predominantly black majority. In his 2003 state of the nation speech, erstwhile President Mbeki talked about South Africa having a 'structural fault' in terms of a 'dual economy and society' in which 'one is modern and relatively well developed' and 'the other is characterized by underdevelopment and an entrenched crisis of poverty' (Mbeki 2003). The latter 'contributes little to

GDP, contains a big percentage of our population, incorporates the poorest of our rural and urban poor, is structurally disconnected from both the first and the global economy and is incapable of self generated growth and development' (Mbeki 2003 in Devey et al. 2006:1).

This understanding of South Africa's socioeconomic problems informed the Mbeki administration's modernization project, which attempted to combine enhanced growth in the first economy with targeted interventions in the second economy to expand social provision and 'relieve the poverty and suffering afflicting these masses of our people' (Mbeki 2003). A part of this modernization project has been the extension of ICT services to previously disadvantaged areas. This is apparent in a letter written in 2001, in which Mbeki stated that the Information Technology revolution 'has to take place essentially in the black urban and rural areas, which are our own domestic Third World relative to the historically White First World' (Mbeki 2001).

These intentions can, however, be traced further back. When apartheid ended in 1994 communication services were concentrated in white urban areas and largely absent in black rural areas. The Reconstruction and Development Programme (RDP), first socioeconomic policy of the post-apartheid government, estimated that there was less than one telephone line per 100 black persons compared with about 60 per 100 whites (ANC 1994:2.8.1). The situation in rural black areas was even worse. A central goal of the post-apartheid government was to provide ICT services to the previously disadvantaged population:

The telecommunications sector is an indispensable backbone for the development of all other socio-economic sectors. An effective telecommunications infrastructure, which includes universal access, is essential to enable the delivery of basic services and the reconstruction and development of deprived areas (ANC 1994:2.8.3).

In 1996, the ANC changed its economic policy from the broad socioeconomic development programme of the RDP to a narrow focus on growth in the neoliberal Growth, Redistribution and Development Programme (GEAR).

Throughout the post-apartheid era, sectoral policies have been developed aiming both to meet the broad goals of the RDP programme, but at the same time adhering to the fiscal discipline of the GEAR. The wish to reconcile GEAR's emphasis on growth and RDP's emphasis on meeting basic needs was reflected in the first White Paper on Telecommunications in post-apartheid South Africa. This ambiguity can be seen in the vision of the White Paper in the following excerpts:

The state's vision for telecommunications is one that balances the provision of basic universal service to disadvantaged rural and urban communities with the delivery of high-level services capable of meeting the needs of a growing South African economy (Ministry of Post, Telecommunications and Broadcasting 1996:17.1.1).

The state recognizes the central importance of access to telecommunications to the achievement of its social and economic goals. Affordable communications for all, citizens and business alike, throughout South Africa is at the core of its vision and the goal of this policy (ibid:1.2).

The vision must therefore reconcile these two seeming opposites within an integrating framework which also allows for a dynamic definition of universal service and facilitates the co-ordination of all available infrastructure behind its goal (ibid:1.3).

However, the policy specifically recognizes the internal disparities in South Africa and hence has the provision of telecommunications to the poor as the immediate target of the universal service policy:

While universal service is a global concern, it is located within a unique context in South Africa. Nowhere else does such disparity of access exist side by side with a developed communications technology sector. Nowhere else are both access and ownership concentrated so heavily in one population group. These imbalances, which are the legacy of apartheid, must be urgently redressed. Members of historically disadvantaged communities, and particularly those in rural areas, must be the immediate targets for the delivery of universal service (ibid:1.1.4).

Between 1999 and 2008 the private operators in the telecommunications sector contributed a total amount of 636 million Rands (496 million NOK) to the Universal Service and Access Fund (USAASA 2008a). This fund was dedicated to cover the cost of provision and usage for 'needy persons' in unserved areas of the country – which basically referred to the previously disadvantaged areas.

It is evident, therefore, that there were both political will and a significant amount of funding dedicated to the provision of ICT to the poor. This thesis investigates and explains how far the pro-poor policy intentions of the ICT policy have been realised in post-apartheid South Africa. To this end it attempts to address the following research question:

*To what extent and why has South Africa's post-apartheid ICT to the poor policy been successful?*

In order to discuss a potential answer the research question this thesis undertakes a *policy analysis*. The answer to the overall research question will thus be discussed on the basis of the answers to the following sub-questions:

- I. What are the policy intentions of the ICT to the poor policy?*
- II. How is the policy implemented?*
- III. What are the results on the ground?*
- IV. What can explain the results?*

The rationale of this study is fourfold. First, it aims to describe the policy intentions of the ICT to the poor policy. Second, it aims to explore the implementation structures and processes. Third, it considers the results in three poor communities. Fourth, based on the answers to the first three questions, the thesis puts forward explanations for the variations in results on the ground.

Policy analysis is a practical discipline and it can be defined as 'a process of multidisciplinary inquiry designed to create, critically assess, and communicate information that is useful in understanding and improving policy' (Dunn 2007:1). The thesis thus aims to come up with explanations that are useful to improving policy, but also to generate interesting questions for further research.

The data used in this thesis were collected through a combination of fieldwork and desk study. In the desk study, a review of government policy papers and

parliamentary acts was conducted in order to understand and describe the policy intentions and tools. I conducted fieldwork from October to December 2008 in order to understand the actual implementation structures in place, the implementation process and the results on the ground in poor communities. In the field, access to ICT in schools, telecentres and households in three poor communities were investigated. In total 45 interviews were conducted with the actors involved in implementation process. The informants ranged from telecentre managers and teachers on the ground to high-ranking bureaucrats in Pretoria.

I would argue that my thesis contributes to gaps in the literature in two ways. Firstly, the vast majority of literature on governance and tools is concerned with Europe and the United States. It has, therefore, been developed in the context of western, modern nation-states with a monopoly of the means of violence and the capacity to implement and enforce central decisions (Risse and Lehmkuhl 2006). However, majority of states in the world have limited statehood in the sense that they lack the capacity to enforce central decisions or face challenges to their monopoly of violence in certain areas (ibid). In these 'areas of limited statehood' governance is likely to function differently than the governance models of the western, modern nation state predicts because the state are not legal-rational bureaucracies and the markets often don't function well as they are often dominated by state-owned monopolies (Noll 2000:183).

Secondly, most policy research on service delivery to the poor in South Africa focuses on basic services such as education, water, sanitation and electricity (Pape and McDonald 2005). Few empirical studies have considered the purported potential of ICTs to reduce marginalisation and social exclusion (Castells 2000). This thesis contributes to both areas in the sense that it looks at pro-poor governance in a technological policy sector in a transitional country.

The thesis is structured as follows. Chapter two puts forward an analytical framework to orientate the empirical study. This analytical framework

discusses key theoretical contributions in order to outline the concepts that are important to the analysis. Chapter three describes the research design and methodology. Chapter four to seven address the four sub-questions outlined above. Chapter four considers the intentions of South Africa's post-apartheid ICT to the poor policy; chapter five analyses the channels through which the policy is implemented; chapter six evaluates the performance of the policy on the ground, and chapter seven attempts to explain why the policy produced the results it did. Chapter eight concludes by summarising the findings of the thesis and suggesting questions for further research.

## 2. Analytical Framework

This thesis analyses the ICT to the poor policy from a governance perspective. A governance perspective entails a broadening of the traditional approach taken on the public sector in public administration and public policy research. Scholars in public administration and policy research traditionally assumed that ‘the public sector functions best when it was apolitical, structured as a hierarchy, and based on a system of merit-recruitment and promotion’ (Kjær 2004:4). However, this traditional notion was challenged by scholars criticising the effectiveness of public bureaucracies. During the 1980s, a wave of New Public Management reforms was implemented in many countries, which involved privatization, decentralisation and agencification (ibid). In addition, non-public actors were increasingly involved in delivering public services. This led to an increased fragmentation of the public sector. Governance research on policy implementation hence broadens the focus to include a variety of public and non-public actors involved in the pursuit of public goals (Kjær 2004:4-5)

A governance perspective directs attention away from questions of *why* policies are adopted and pursued to those regarding *how* they are designed and implemented and *what* results they produce (Jreisat 2002:1). It focuses the analysis on the structures and processes of decision-making and, more importantly, on their consequences in terms of implementation and results (ibid:3). A governance perspective, therefore, focuses on the organisational aspects of the state and especially how it involves various non-public actors, such as NGOs and private companies, in its effort to pursue public goals (Kjær 2004:5). Transferred to this thesis, the question of this thesis entails a focus on how the ICT to the poor policy is designed and implemented and what results they produce on the ground in three poor communities.

As mentioned in the introduction, this thesis conducts a policy analysis of the ICT to the poor policy in South Africa. There are many ways of conducting a



policy analysis, but this thesis has chosen an instrumental tools approach to study the policy process, structures and results that follow the adoption of the policy intentions. The tools approach links the governance literature to the wider literature on policy research in political administration and political science by directing attention to the tools chosen to achieve public goals and their different organisational structure which can involve both public and non-public actors (Pierre and Peters 2000:42).

This way of thinking about policy focuses attention on the tools that the government has at its disposal in order to achieve political objectives and the congruence or incongruence between these different tools and the government's goals. The basic argument of the tools approach is that the choice of policy tools to achieve public goals significantly structures the implementation process and therefore affects the results in the particular policy sector in question (Salamon 2001:11). Hence, the choice of tools or instruments can significantly enhance or reduce the effectiveness of the policy implementation process (Peter and Van Nispen 1998; Pierre and Peters 2000; and Salamon 2001).

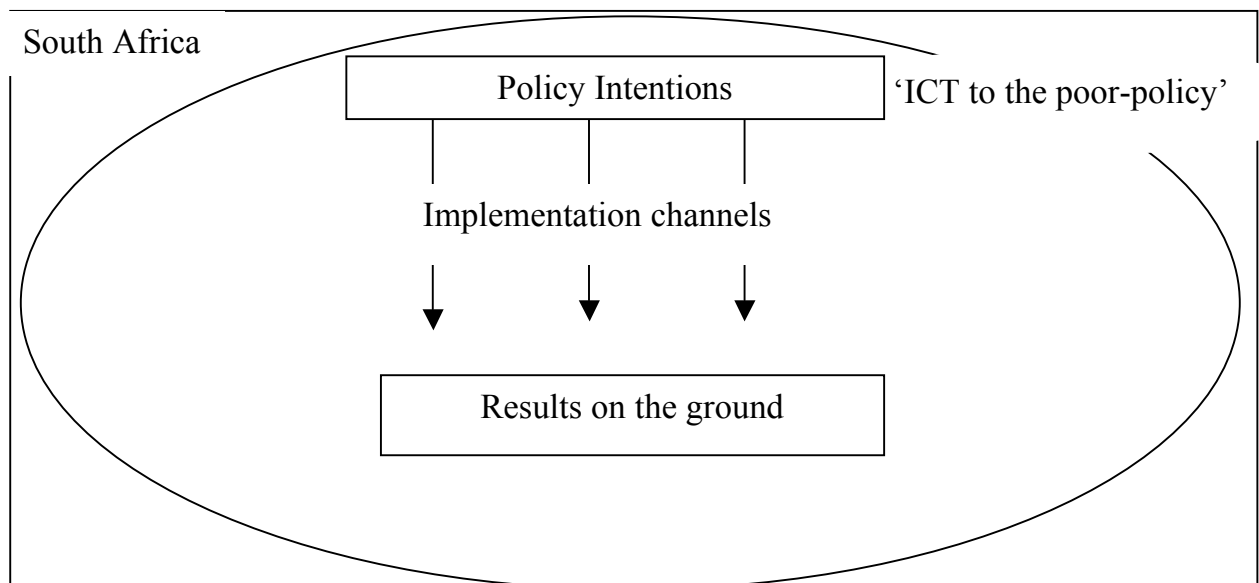
Different tools rely on different implementation structures and create different implementation processes. It is assumed that certain tools and structures are better in reaching certain objectives such as equity objectives than others (Salamon 2001). However, the way a tool is interpreted and implemented is influenced by the particular national and local context and policy sector in which it is used.

Based on the 4 sub-questions posed in the introduction, a conceptual model has been developed in order to guide the empirical investigation in this thesis.

The first question is *what are the policy intentions?* This question refers to the first independent variable in the thesis, which is the policy intentions as stated in central government documents. The second question is *how is the policy implemented?* This question refers to the second independent variable in the

thesis, which is the implementation of the ICT to the poor policy. The implementation is operationalized as three implementation channels consisting of different tools, structures and consequently processes in place to achieve the overall goal of providing ICT services to the poor. The third question is *what are the results on the ground?* This question refers to the dependent variable in the thesis, which is the results of the three channels on the ground in three poor communities in South Africa. The final question is *what can explain the results?*

The tools approach is an instrumental perspective. An instrumental perspective assumes that the tools and structures chosen in the policy design are chosen in order to reach the public goal and that the tools and structures chosen in the policy design alter the behaviour in the policy process and the results on the ground (Christensen et al. 2007:30). Hence, the variations in the results on the ground can be explained with reference to the variations in tools and structures chosen. Finally, the special features of the policy studied, which is the ICT to the poor policy, and the country context which is South Africa will influence the way the policy is formulated and implemented. These are the contextual variables. The conceptual model is presented visually in figure 1.



**Figure 1:** Conceptual model of the policy process

The aim of this chapter is not to comprehensively discuss the plurality of theories and their respective strengths and weaknesses. Rather, it aims to purposefully select theories and approaches that convey an analytical contribution to the questions and conceptual framework presented in figure 1. The first part of the chapter discusses the tools approach, the second part describes the elements in the conceptual framework, and the final section sets out the approach for evaluating the policy process and results.

## 2.1 Policy intentions

The policy intentions are stated in public policies. ‘Public policies sets forth courses of action for addressing problems and for providing goods and services to segments of the society’ (May 2003:223). Hence public policies set out a course of action for what would like to be achieved. However, they do more than simply setting out the objectives of the policy. They also ‘typically contain a set of intentions or goals, a mix of instruments or means for accomplishing the intentions, a designation of governmental or non-governmental entities charged with carrying out the intentions, and an allocation of resources for the requisite tasks’ (ibid). Hence, public policies state the desired course of action and structure the implementation process (ibid: 224).

An extensive literature on implementation failure finds that inadequate specification of policy goals and the desired action as well as an inadequate inclusions of features to overcome basic conflicts in the implementation process can lead to implementation failure (May 2003:224). The top-down implementation literature has argued that the inadequate specification of goals, complex implementation structures and indirect control which involves multiple actors, decision point and levels of action as well as unsupportive political environments have been key reasons behind policy failure (Mazmanian and Sabatier 1983; Van Meter and Van Horn 1975).

A central assumption in this thesis is that the choice of tools and their implementation structures as stated in the policy design structure the implementation process, which in turn affects the results of the policy on the ground. However, this assumption can be criticised as the choice of tools is not a purely technical affair of choosing the goals that are most likely to achieve the goal. Instead, the choice of tools is a profoundly political endeavour (Peters 2001). The choice of tools is influenced by a range of factors, which include interests, ideologies and the international environment (ibid:552-59). Firstly, the choice of tools structure the implementation process and determines to whose advantage the discretion of the policy process can be used. (Salamon 2001:11). For example, public bureaucracies have the opportunity to affect implementation when direct government tools are chosen, while private sector service providers and non-governmental organisations gain from the choice of indirect policy tools (Peters 2001:560-61).

Secondly, different ideas and ideologies influence the choice of tools. Actors on the left side of politics tend to favour direct policy tools and implementation through hierarchical bureaucracies, because they are seen as more effective at achieving equity objectives (ibid:556). Those on the right of the political spectrum, on the other hand, typically prefer indirect policy tools and market solutions as these are thought to be cost-efficient, disguise government involvement and leave a wider arena to public choice (Peters 2001; Salamon 2001). Finally, the choice of tools is affected by the international environment. The neoliberal New Public Management reforms implemented in the 1980s and 1999, for example, emphasised market-based solutions to public problems. These were exported to developing countries through the World Bank's Structural Adjustments Programmes, which rewarded governments that adopted pro-market policy measures and tools (Peters 2001:558).

Although certain aspects of this will be touched upon when the policy intentions of the ICT to the poor policy is discussed in the empirical part of this

thesis, a full discussion of the range of factors affecting the policy formulation process is beyond the scope of this thesis.

## 2.2 Implementation Channels

As seen above, public policies ‘typically contain a set of intentions or goals, a mix of instruments or means for accomplishing the intentions, a designation of governmental or non-government entities charged with carrying out the intentions’ (May 2003:223). An implementation channel in this thesis refers to the tools chosen, the implementation structure and the implementation process structured by these. The implementation process refers to the activities and behaviour that takes place over a certain period of time in the aftermath of the adoption of policy intentions, while the structure refers to the frame of rules and role expectations within which the implementation process occurs (Christensen et al. 2007:27).

### 2.2.1 Tools

The concept of a tool or an instrument to achieve public objectives is quite easy to comprehend in theory. When turning to the real world, however, a tool is quite difficult to describe and the concept has been used to refer to a wide range of empirical phenomena. Instruments can be characterized as an object and as an activity (Peters and Van Nispen 1998:13). If understood as an object, it refers to the instructions or rules in public acts. Understood as an activity, it refers to ‘a collection of policy activities that show similar characteristics focused on influencing and governing social processes’ (ibid:14). This thesis uses the former definitions and sees a tool as an object specified in public acts.

However, more broadly, this thesis relies on Salamon (2001) who defines a tool of public action as ‘an identifiable method through which collective action is structured to address a public problem’ (ibid). This definition implies that the choice of tools made by policy makers in the policy design structure

implementation as they define the actors involved, their roles and the relationships between these (ibid:19).

However, every tool has an implementation structure in terms of an organisation or a set of organisations. Salamon (ibid) includes the structure in the concept of a tool and understands the structure simply as one dimension of the tool. This thesis has a similar understanding, but instead of including the implementation structure in the concept of a tool it will use the concept of a tool to denote the object chosen in the acts – what Salamon (ibid) calls the ‘vehicle’ – and implementation structure to refer to the organisational structure that carries out the intention and tool.

Since channels are in reality packages of different attributes, they can be grouped differently based on the dimension one chooses to look at. This thesis has chosen to group tools according to the nature of their implementation structures and specifically the extent of their directness. Directness here refers to ‘the extent to which the entity authorizing, financing or inaugurating a collective activity is involved in carrying it out’ (ibid:27). The concept rests on the observation that any effort to deliver services is made up of several activities that are not necessarily carried out by the same entity. The more one institution is involved in the authorization, funding and delivery, the more direct the tool is. An *idealtypisch* direct tool is thus a tool where government institution does everything, while an indirect tool is one where these functions are subcontracted to various actors, such as semiautonomous agencies, community groups, non-profit organisations or private companies. The more extensively functions are carried out by third parties, the more indirect the tool is (ibid).

Salamon (2001) argues that indirect and direct tools have relative strengths with relation to the evaluation criteria set out above. This section will briefly set out his arguments.

Salamon (2001) argues that the choice of indirect policy tools is likely to have several benefits for the cost-efficiency of a policy. Firstly, indirect policy tools can inject competition into the provision of public services and thus break the monopoly of governmental agencies or state-owned companies (ibid:31). Secondly, indirect tools can also provide access to skills and investments that are needed to cope with complex public problems, but that public agencies may not possess (ibid). Thirdly, indirect tools are more flexible. This makes it easier for governments to experiment and change course when needed to remain responsive to new needs. This is because the government is only involved in authorizing and does not have to create the entire bureaucratic structure to implement an initiative (ibid).

It is widely argued, however, that indirect policy tools have several disadvantages with respect to effectiveness, manageability and equity. Firstly, indirect tools are often less effective and much more difficult to manage than direct tools. They are difficult to manage because, rather than using direct implementation through hierarchical bureaucracies, they rely on third parties with different goals and actors. New economic theories of organisation have shown that hierarchical inter-organisational principal-agent relations within bureaucracies are easier to manage than intra-organisational relationships between the governments and third parties such as private companies and NGOs (Salamon 2001:31). When several different organisations are involved in a task, the chances increase that principals and agents have different interests and values and this creates high costs related to bargaining and delays in bargaining (ibid). The more scattered the authority, therefore, and the more interests and values diverge, the greater the risk of principal-agent problems, goal displacement and consequently ineffectiveness.

This is one of the central findings in the top-down implementation literature from the 1970s and 1980s (Pressman and Wildawsky 1973; Mazmanian and Sabatier 1983; Hogwood and Gunn 1984). Pressman and Wildawsky (1973) argue that even when a policy has clear goals, success is not guaranteed when

implementation relies on multiple actors. Mazmanian and Sabatier (1983:27) claim that one of the most important conditions for successful implementation is that implementation structures should be hierarchically integrated both between and within implementing institutions. They argue that if the implementing system is only loosely integrated, there will be considerable variation in the extent to which the implementing officials and target groups comply with the central decision as each group responds and adapts to the incentives for modification within their local setting (ibid). Hogwood and Gunn (1984:199-206) recommend, as one of ten criteria for successful implementation, 'that there is a single implementing agency that need not depend upon other agencies for success, or, if other agencies must be involved, that the dependency relationships are minimal in number and importance'.

However, it seems apparent that not all third party arrangements affect implementability and effectiveness the same way. Indeed, the type of third party a tool involves affects to what extent public goals are achieved. Public sector managers for human service programs tend to favour contracts with non-profit actors over contracts with profit actors because non-profit actors are more likely to share the goals of the public sector (Salamon 2001:32). When the public sector as the principal and agent do not share a common goal, then the task of ensuring that the agent fulfils the principal's goals becomes much more complex and problematic (ibid).

Finally, it is suggested that direct tools are more appropriate than indirect tools when the overall goal is equity or redistribution because third parties and especially private companies do not necessarily share the same equity goals as the government (Salamon 2001:32). Unless they are provided with incentives to achieve such goals, they are not likely to work towards them. Nevertheless, private companies are often pulled into the policy process *without* being given incentives to deliver services to the poor. The result is that providers will work to attract consumers who will enhance their profits rather than to provide services to the poor (Herzlinger in Salamon 2001:32).



### 2.2.2 Implementation structures

Salamon (2001) links the tools approach to the new governance literature. He argues that the most important change in the United States' public sector since the Second World War was the shift from using direct tools relying on bureaucracies to achieve public goals to indirect tools that utilise more complex market and network structures involving third parties such as private companies and NGOs (Salamon 2001:1-2). This is a version of the familiar observation made by most of the governance literature which uses the concept of governance to describe the contemporary setting of western governance as distinct from the weberian hierarchical bureaucracies dominating implementation in the planning era of the 1960s and 1970s and the market-dominated 1980s (Hill and Hupe 2009:14). The contemporary governance epoch has evolved as a realization, it is argued, that the government cannot do everything itself, but neither can it expect the market to resolve all public problems (ibid). Hence, it engages with third parties such as private companies and NGOs to solve public problems and reach public goals (ibid).

The governance literature discusses three models of coordinating public action, which predominate in each of these periods. These are respectively hierarchies, markets and networks (Pierre and Peters 2000; Thompson 2003; Kjær 2004). Thompson (2003:22) argues that the key feature of hierarchy is that it requires some form of rule-driven design or direction. It requires explicit, deliberative action towards an agreed upon goal. Kjær (2004) connects hierarchies to the notion of a western, liberal democracy and Weber's concept of an *idealtypisch* legal-rational bureaucracy. Policy goals are formulated by elected officials and implemented directly by neutral and hierarchically organized bureaucracies. Hierarchies are a structured mechanism of control, designed to run big and complex organisations like public bureaucracies (Thompson 2003:23). It usually involves a layered or tiered organisational structure often referred to as divisions or departments that are organised in super ordination or subordination of authority and power (ibid:24). The focus is on control over the

implementation process through a top-down command structure with a downward flow of directions to ensure that the whole chain act together to achieve the collective purpose (ibid). Such hierarchical organisational models can be both intra-organisational and inter-organisational. Pierre and Peters (2000) connects the hierarchical model of service delivery to the post-war era in Europe, which was characterized by great faith in the state to deliver services and achieve socioeconomic development.

In the 1980s the hierarchical model of governance came under increasing pressure as the political climate in the west was changed by the neoliberal policies of Thatcher in Britain and Reagan in the United States. From being the solution to public problems, the bureaucracy was increasingly seen as the cause of public problems (Kjær 2004:24). Instead of public bureaucracies, the market and its core mechanism of supply and demand were seen as the most efficient and effective way of allocating goods in a society. The core feature of the market is that it claims to organize and coordinate economic activity without any conscious organising centre. It involves a competitive process in which suppliers compete to offer goods and services at the lowest prices to the customers who make their decision based on price. If there is only one seller – that is if there is a monopoly - the monopolist can manipulate the market to its own advantage and against the interest of the majority (Thompson 2003:26). This criticism provided the intellectual and ideological basis for the New Public Management (NPM) reforms aimed at improving the efficiency and effectiveness of the public sector (Kjær 2004:25; Christensen and Lægreid 2007: 4). Central structural changes adopted under the label of NPM reforms were the privatization of public companies, the contracting out of service delivery to private companies, the emphasis on market liberalisation and competition, the creation of single purpose agencies and decentralisation (Kjær 2004:25-31).

The increased fragmentation of the public sector that resulted from these reforms has led to increased scholarly focus on ‘networks’ as a third delivery

structure for public services (Kjær 2004:5). This model is often seen as a hybrid involving elements of both hierarchical and market models. Some scholars see it as the most common structure of governance in modern societies (Pierre and Peters 2000:19). The organisational structure in a network tends to be formally flat, but in reality there are often significant differences in power and authority between the various participants in the network. The notion of a network rejects the sharp distinction between political and private interests, which is a central precondition in both public administration and market approaches. It focuses instead on the collaborative nature of relationships between the public and a range of third party actors such as NGOs, communities and private companies (Salamon 2001:16). In the governance literature on western countries, networks are understood to work through loyalty and trust rather than prices as in the market model or administrative order as in the hierarchy structure (Thompson 2003:31).

## 2.3 Context

### 2.3.1 Governance in an African context

In South Africa, there has been an increasing adoption of policy tools that require the involvement of the private sector and civil society actors in the policy process in order to achieve public goals (Mhone and Edigheji 2003:2). Hence, market and network structures involving third parties have become increasingly common in service delivery in South Africa.

However, the governance literature, and the description of the models of governance cited above, tends to concentrate on an ideal type of the western, modern nation-state with the capacity to implement and enforce central decisions (Risse and Lehmkuhl 2006). However, these structures of governance are likely to function very differently in developing and transitional

countries like South Africa, which often lack legal-rational bureaucracies and well functioning markets.

Indeed states and politics in Africa are very different to those in Western Europe (Bayart 1993; Castells 2000; Chabal and Daloz 1999). In the latter ‘the Hobbesian notion of the state led to the progressive development of relatively autonomous centres of power, invested with sole political legitimacy’ (Chabal and Daloz 1999:16). To a great extent states in Western Europe are organised through legal-rational bureaucracy; that is, based on the separation of the public and private spheres (Weber (1978 [1968])).

In Africa, however, externally imposed colonial rule laid the foundations for a different kind of state. The legal-rational sphere was confined to the cities, the immigrant population and small sections of the colonized population. The vast majority of the population was ruled indirectly. The legacy of this mixture of patrimonial and legal-rational domination is apparent today and the state in Africa remains ‘firmly embedded in the patrimonial practices of patrons and their networks’ (Chabal and Daloz 1999:16). The result is hybrid ‘neopatrimonial’ regimes, in which the ‘customs and patterns or patrimonialism co-exist with, and suffuse, rational-legal institutions’ (Bratton and van de Walle 1997:62). Thus, while formal structures and rules exist, in practice, the separation of the private and public sphere is not always observed due to a coexistence of clientalist networks.

While the intensity and extensity of the legal-rational sphere was greater in South Africa than most of Africa, Mamdani (1996) has shown how the mode of colonial administration in South Africa was similar to elsewhere in the continent. The fact that the state in African is quite different to the state in the Western European context indicates that theoretical insights from the latter sphere should not be unquestionably transferred to the former. This may potentially have an enormous impact on the manner in which goods and services are delivered.

Also, the use of markets as governance structures is likely to function best in ‘the shadow of the hierarchy’ (Heritier and Lehmkuhl 2008:2). The shadow of hierarchy can involve legislative sanctions or incentives. This might, for example, mean the legislator or the regulator of a particular sector can threaten to enact adverse sanctions unless the potentially affected actors change their behavior to accommodate the legislators or the regulator’s demand (ibid). However, whether firms choose to comply with the demands depends on the likelihood that the legislator or regulator would actually implement the threat.

However, this shadow might be weak in certain sectors or areas in South Africa. Hence, Risse and Lehmkuhl (2006) talk about governance in ‘areas of limited statehood’ in which the state lacks the capacity to implement and enforce central decisions. Hence, ‘the shadow of the hierarchy’ may be seen as an assumption built into the western notion of governance. However, since this is not present in all sectors or areas of South Africa, the forms of governance that occurs may look very different and often be a mixture of markets, networks and hierarchies as well as patrimonial relationships.

### **2.3.2 Telecommunication reform and universal access in developing countries**

In the late 1980s the telecommunication policy in many developing countries entered into an era of neoliberal reform. In 1998, the liberalization agreement of the World Trade Organisation’s (WTO) group on basic telecommunications was launched and it committed its signatories to liberalizing basic telecommunications. By early 1999, 80 of the 132 WTO members had signed, including South Africa. The goals and process of reform differs among the various countries, but the trend is clear. There was a movement away from telecommunication sectors consisting of state-owned monopolies towards a privatized and at least partially competitive industry, often monitored by an independent regulator (Noll 2000:183).

In the context of an increasingly liberalizing telecommunication sector, many countries adopted universal service and access measures to ensure that areas and parts of the population that were deemed unprofitable by the private companies that increasingly dominated the sector would be able to avail of ICTs. An overview over the most common universal service and access measures is discussed in the *ICT Regulation Toolkit* developed by the UN agency ITU and the World Bank agency Infodev (Dymond et al. 2008). The toolkit draws on experience from developed countries, but it is important for understanding the intentions behind the approaches and policies taken in developing and transitional countries like South Africa.

The first strategy is Universal Service Obligations (USOs). These are obligations given to public or private operators to make them roll out services to commercially unviable areas. Before liberalization, when the communications sectors were usually dominated by a state-owned monopolistic network, the USOs were seen as part of the organization's general public service mandate. The operators were not run as capitalist enterprises, financial losses were rarely recognised and, if they were, it was expected they would be met by internal cross-subsidies. No unfairness was perceived because social obligations were in society's interest and the organization's customers, who ultimately bore most of the cost, represented most of society (ibid).

Under the threat of liberalization, many incumbent operators tried to use their social roles to help secure preferable arrangements with the new regime. If they lost the fight against liberalization, incumbents often argued in favour of access deficit charges or shared funding of USOs. This was often more to burden their new competitors than to gain direct benefits for themselves. In most countries, the obligations on the national company were preserved and made explicit for the first time. There was little debate about the content of the obligations, and none about who should bear them, as the incumbent was seen as the only candidate. These obligations were often just a statement of existing practice. In a liberalizing market, imposing USOs on the incumbent operator alone is

contrary to the objective of competition on equal terms. While some countries have used administrative USOs even after liberalisation, the trend is towards more competitive procedures. Often, there is a move away from forced obligations towards a regime where the cost of universal access and service (UAS) provision is shared proportionally among all industry participants and all players have an opportunity to participate, often through a competitive mechanism, in the provision of UAS (ibid).

A second strategy often employed to reach Universal Service and Access goals were Universal Service and Access Funds (UASFs). These funds have often been created in developing countries in the context of liberalized markets, to provide financial assistance for the following:

- Meeting regional and rural service targets for telephony and Internet services;
- Supporting key users, such as schools and health clinics to access the Internet in regional and rural areas;
- Supporting ICT projects by commercial and development organizations that provide national and local content, services and applications that stimulate Internet take-up and usage; and
- Supporting various activities related to regionally balanced network and service development, such as Internet Exchange Points and regional Internet points of presence (POPs) (ibid:3.2).

UASFs tend to use a minimum-subsidy auction mechanism, which means that the lowest subsidy demanded wins. This mechanism was designed as a strategy to use performance-based subsidies to support service delivery in cases where the market is not expected to reach, but where policy concerns justify public funding or redistribution. Such subsidies support the provision of services in rural and disadvantaged areas where the cost of service provision combined with limited revenue potential might render service provision unprofitable.

A final strategy is the telecentres. The idea of a telecentre arose in Scandinavia in the 1980s and has since spread to many developing countries (ibid:3.3.3). A telecentre is a place where the public can access and use ICTs. The most common definition of a telecentre refers to a place where the public can access computer and internet services. Telecentres have in many countries become part of universal access and service programmes. Telecentres can be run as a

small business such as a cyber café with some non-commercial features, or they can be run primarily for community benefit as non-profit or locally subsidized facilities. In the latter case they are usually known as community telecentres or multi-purpose community telecentres (ibid).



### 3. Research design and Methodology

The prime objective of this chapter is to describe the research design and methodology used in this thesis and to assess the overall soundness of the project.

#### 3.1 Research Design and operationalisation

The research question of this thesis is *‘to what extent and why has South Africa’s ICT to the poor policy been successful?’*

The design chosen is a case study of South Africa’s ICT to the poor policy. A case study has advantages over other research designs when the objective of the study is to capture a contemporary phenomenon in its real life context and when how and why questions are asked (Yin 2003:1). This case study consists of multiple sub-units of analysis, or cases within the case, since the ICT to the poor policy has multiple objectives, channels and outputs on the ground. As a result the thesis combines both a single and a comparative case method. The overall design is a single case study of the ICT to the poor policy, but since this is made up of three implementation channels, the case has three sub-units of analysis within the case that can be compared.

The sub-questions in the introduction and the conceptual model set out in the theory chapter constitute the analytical framework for this thesis. The central aim of this thesis is to see how the policy intentions and implementation channels chosen in the design of the ICT to the poor policy affects the results of the policy on the ground in the South African context. The independent variables in this thesis are the policy intentions and the implementation channels adopted to achieve the intentions, while the results of the policy on the ground are the dependent variable.

The first independent variable is the policy intentions of the ICT to the poor policy. In South Africa, the ICT to the poor policy consists of several acts and policy documents passed and issued by the government. These documents were analysed in order to understand the key objectives, tools and structures of the ICT to the poor policy.

The second independent variable is the implementation channels. A fundamental assumption in this thesis is that the process and results can be altered by changing the organisational structures of a programme and hence that these organisational structures are central in explaining the results on the ground. It further assumes that the formal organisational structure channels action in a particular way (Christensen et al. 2007:152). The analysis of government acts and policy documents relating to ICT to the poor policy allowed me to identify the multiple intentions, tools and structures of the policy. On the basis of these, three implementation channels were operationalised. These were i) the telecentre channel which aimed at providing telecentres in poor communities, ii) the market channel which aimed at providing voice telephony to households and internet to schools and iii) the education channel which aimed at providing computers and train teachers in schools. An implementation channel refers to the tools and structures created in the policy design to carry out the policy intentions and the implementation process and results this resulted in.

The timeframe of my analysis is of the policy implementation process of the ICT to the poor policy is from the adoption of the policy in 1996 and 2008 when the fieldwork was conducted. My analysis also takes place across levels from the results in three poor communities, through local and provincial structures to the national implementing and policy-making actors in the capital Pretoria. Hence, both the time and the level dimension must be factored into the analysis. The approach taken in this thesis is largely an instrumental one. However, it does acknowledge and is open to the way that the specific South African and policy context affects the implementation process and results.

The dependent variable in the thesis is the policy results on the ground in poor communities. When discussing results of a policy it is common to distinguish between outputs and outcomes (Hill and Hupe 2009:9). Outputs refer to whether the specified activities are established on the ground, whereas outcomes refer to whether they have any effect on the problem. In many implementation studies, goal achievement has been a normal evaluation standard and this implies a focus on outcomes (ibid). Since this thesis concentrates on the relationships between the implementation process and structures and the results, the focus must be on explaining the outputs on the ground because it is essentially outputs that can be explained by the policy process (Winter 2003).

Moreover the results or the effects of a policy can be measured narrowly or broadly (Christensen et al. 2007:153). This thesis uses a narrow definition of an effect or a result and focuses on to what extent the central intentions of the policy have been achieved. Hence performance indicators will be developed on the basis of the central intentions of the three channels. No appropriate statistics on the performance of the three channels in poor communities are available in South Africa and a large statistical survey is beyond the scope of this thesis. Hence, the results of the policy will be investigated on the ground in three poor communities in South Africa. The channels had all been poorly evaluated by the implementing agents, but the available reports were collected during fieldwork. These, interviews with informants and fieldwork observations will also be used to describe the outputs of the three channels.

Outcomes, as opposed to outputs, refer to the extent that policy has impacted on the problem it is attempting to resolve. In the case of the ICT to the poor policy, the problem was low level of usage of ICTs in poor communities. A successful outcome would be the increased use of ICT in the poor communities. Therefore, I will try to look at usage levels in the three poor communities. People may have used ICTs in other places than the ones developed by the government, which would not be a direct result of the policy.

However, when measured at the local level and seen in relation to the outputs and performance indicators in the same communities, outcomes are likely to give valuable information on to what extent the output of the policy has impacted on the problem of low levels of ICT usage in the three poor communities. Hence, the outcome variables that will be considered it presented in table 1.

**Table 1:** Usage indicators for computers and the internet

	<b>Usage in the three communities</b>
1.	% of people in the three case communities that had used a computer
2.	% of people in the three case communities that had used a computer within the last 6 months
3.	% of people that had used the internet in the last 6 months

The overall question asked in this thesis is a why question and the central rationale of this thesis is to explain the results of the policy on the ground. However, in order to do this, the policy intentions, the implementation structures and the outputs on the ground must be described and the process leading from the intentions to the results on the ground must be explored. Consequently this case study must first explore and describe in order to be able to explain. The aim of this thesis is not to come up with definitive answers, but rather to suggest tentative but empirically-based explanations related to how the pro-poor tools and structures of the South African telecommunication policy has affected the results on the ground.

### 3.2 Number and location of research sites

The ICT to the poor policy targets previously disadvantaged or poor communities. However, an investigation of the outputs of the three channels in each poor community in South Africa is way beyond the scope of this thesis. Instead I chose a smaller selection of communities that were as representative as possible for communities in which poor people live in South Africa. All of the communities are located in the province of KwaZulu-Natal. This is for several reasons. KwaZulu-Natal is home to 21% of South Africa's poor and is has the second highest proportion of the poor in South Africa after Eastern Cape (Leibrandt and Woolard 1999:45). KwaZulu-Natal is also the province in which I have best access to poor and previously disadvantaged communities because I have knowledge and contacts in the province after two previous study periods at the University of KwaZulu-Natal.

Through my supervisor I had access to a project in which he was the principal researcher. This was of great help during fieldwork. The full title of the project is: *Community-based Learning, ICTs and Quality-of-life (CLIQ): A Participatory Approach to Assessing the Impact of ICT Access on Quality-of-life in KwaZulu-Natal*. The thesis thus became a part of the CLIQ, which was a three year research project conducted as a joint venture between a South African research theme on School of Development Studies and a Norwegian Research team from Norwegian Institute for Urban and Regional Research and funded by the National Research Foundation (South Africa) and Research Council of Norway.

The project was conducting research on the impact of ICT on quality of life in four poor communities in KwaZulu-Natal: two urban and two rural. I chose to locate this study in three of these four communities. The communities were chosen in cooperation with researchers on the CLIQ project who had good local knowledge on what constitutes a representative poor community in South

Africa. Hence, communities were chosen based on the following selection criteria to ensure unbiased results.

Firstly, the policy targets previously disadvantaged urban and rural areas communities and hence the communities chosen needed to be as representative as possible for such previously disadvantaged communities. Previously disadvantaged communities are the communities located in the areas to which the apartheid regime restricted the black majority under apartheid. The province of KwaZulu-Natal had two black, rural homeland areas under apartheid and several black townships on the fringes of the city of Durban. The CLIQ project had chosen to study two communities in a former homeland in the deep rural areas and two urban communities on the fringes of the city of Durban.

Secondly, the communities chosen needed to have all the three implementation channels present in terms schools, households and telecentres. Since all communities have schools and households, the selection criteria were whether they had an operating telecentre. The CLIQ project had, through discussions with USAASA, located the poor communities in the province with the best working telecentres as they were investigating the impact of ICT on quality of life. Hence, these communities becomes 'least likely cases' meaning that if the policy had failed to provide access in these communities, it is likely to have failed in other communities as well.

A final important consideration for selecting the communities was that I needed to have access and introduction to the communities. The high level of crime and the lack of street signs in many disadvantaged areas in South Africa, combined with the history of racism, make it risky for a young, white woman to travel in to such areas alone without knowing anyone. Having contacts to the communities through the CLIQ project was crucial to enable me to safely and effectively conduct research in these areas.

Based on these criteria, three previously disadvantaged communities in KwaZulu-Natal were chosen. Inanda is an urban community located in a black township to the North of Durban, Adams Mission is a peri-urban community located to the South of Durban, and Sicabazini is a remote rural community located in north KwaZulu-Natal on the boarder to Mozambique in the former homeland Zululand. However, because the telecentre in Inkhlazuka was not operating at the time of my fieldwork, I chose to leave this out of my fieldwork. The location of the KwaZulu-Natal in South Africa is shown on the map in figure 2 and the location of the communities in the province are shown on the map in figure 3.



**Figure 2:** Map of South Africa with study area of KwaZulu-Natal marked.

**Figure 3:** Map of KwaZulu-Natal with case communities marked

### 3.3 Selecting informants and institutions

The ICT to the poor policy aimed to provide ICTs to schools, telecentres and households in the disadvantaged areas. The starting point of my fieldwork was schools and telecentres in the three case communities. Access in households was covered in the CLIQ survey discussed below. I conducted observations and interviews in the telecentres and from there I visited the surrounding schools. One telecentre and between two and four schools were visited in each location. Between two and five days were spent in each of the three poor communities. The sample of schools and telecentres in the different communities is shown in table 2.

**Table 2:** Number of schools and telecentres visited in the three communities

	<b>Sicabazini</b> (Rural)	<b>Adams Mission</b> (Peril-urban)	<b>Inanda</b> (Urban)	<b>Total</b>
Telecentres	1	1	1	3
Schools	2	4	4	10

At the local level, interviews were conducted with 1-3 telecentre managers or staff in each telecentre and 1-2 teachers in each school, preferably the principal or the teacher teaching the subject ‘Computer Application Technology’. The interviews were combined with observations in the cyber labs and telecentres. Although, a more thorough investigation of the situation in schools would have been useful, the teachers were very busy and I felt that it would have been wrong to take up more time than absolutely necessary.

From the teachers and the telecentre managers, a method of snowballing were used in order to get in touch with new informants involved in the implementation on the ground and at the higher levels in the three channels. Through these interviews I was able to gain an understanding of the implementation structure at the local, provincial and national level as well as explore the implementation process. 20 interviews were conducted with bureaucrats and others involved in the implementation.



Altogether, 45 qualitative interviews with people involved in the three implementation channels at the local, intermediate and national level were carried out. A list of the informant's title, organisation and date is presented in subchapter 9.3 in the reference chapter. Table 3 shows the distribution of informants on the local, intermediate and national level in the three channels.

**Table 3:** Distribution of informants in the three implementation channels

	<b>Educational channel</b>	<b>Telecentre channel</b>	<b>Market channel</b>	<b>Others</b>	<b>Total</b>
National	0	2	2	2	6
Intermediate	5	3	0	6	14
Local	11	9	2	3	25
<b>Total</b>	14	14	2	13	45

As seen in table 3, more interviews were conducted with people in the educational and telecentre channel than in the market channel. No one was interviewed at the local and intermediate level in the market channel because information on access in the household could be obtained from the CLIQ survey and the market channel had no local structure beyond the telecommunication companies. Interviews with these might have given fruitful information, but I did not have the time to do this during fieldwork. Instead, I chose to rely on secondary material to add to the interviews on the national level. Most important in this respect were Hodge (2003), Makhaya and Roberts (2003), Benjamin (2001) and Esselaar and Gillwald (2007). No one was interviewed at the national level in the educational channel, but this was not a problem since the implementation structure in the educational channel was provincial. Further, the interviews in each channel also gave useful information about implementation in the market channels and vice versa, and the provincial actors gave useful information about the local and national level.

## 3.4 Data

The rationale of this thesis requires the collection and analysis of different types of data and to some extent a triangulation between different types of data. The data collection process therefore combined a review of relevant policy documents and reports, qualitative interviewing and the use of existing and available statistics. To describe the intentions of the policy, a review of policy documents were conducted before entering the field. After reviewing the central policy documents, a fieldwork was planned and conducted from October to December 2008. Of a total of eight weeks in South Africa, seven were spent in the KwaZulu-Natal and one in the capital Pretoria. During fieldwork, the implementation channels were explored through observation and qualitative interviewing in starting with the results in telecentres, schools and households and exploring the local, provincial and national implementation structures in a bottom-up manner ending up in Pretoria where the key intentions of the national policy makers were elaborated on further.

### 3.4.1 Primary sources

#### Policy documents

In order to understand the policy intentions of the ICT to the poor policy a review of relevant policy documents were conducted, but the intentions were also explored in the interviews during fieldwork. Most documents were found on the internet pages of the South African Government, the Department of Communications (DoC) and the Department of Education (DoE) as well as on the implementing agents ICASA and USAASA's webpages, but some were also collected during fieldwork. To ensure that I had collected all the relevant policy documents, phone calls were made to the head of the policy unit in the DoC, the Presidential National Commission on Information Society and Development (PNC on ISAD) and the Department of Education. The review was more challenging than I envisaged because the policy framework was

fragmented and had changed several times in the post-apartheid era. However, the review found that the central intentions of their ICT to the poor policy were stated in the following documents:

- \* The White Paper on Telecommunications (1996)
- \* The Telecommunications Act (1996)
- \* The Universal Access and Universal Service Discussion Paper (1999)
- \* The Telecommunications Amendment Act (2001)
- \* Policy Directions (2001)
- \* The White Paper on E-education (2004)
- \* The Provincial Department of Education's Strategy on ICT
- \* Electronic Communications Act (2005)
- \* The Universal Access and Universal Service Discussion Document (2008)

The legislation in the communications sector had been reformed three times in the post-apartheid era. The first legislative reform was in 1996 with the launch of the first White Paper on E-education and the Telecommunications Act of 1996. The second legislative reform was in 2001, with the adoption of new policy directions and an Amendment Act. In 2005 these were replaced by the Electronic Communications Act. However, the key intentions, actors and tools in the ICT to the poor policy remained the same under this new legislation.

Despite several efforts, these acts were never specified into national or provincial strategies with clear targets and timeframes. In addition to these acts in the communications sector, I found the White Paper on E-education (2004) and the provincial strategy of education to be important documents adding to the above. The documents above were analysed in the sense that the central ICT to the poor policy intentions and tools were identified.

## Interviews

The other important data collection method utilised in this thesis was interviewing. Three interview guides were developed to three groups of people.<sup>1</sup> One guide was made for the telecentre managers, one for the teachers and one for the bureaucrats involved in the implementation process on various

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<sup>1</sup> The interview guides are presented in Appendix 1.

levels. All the interviews were semi structured, but a method of probing to get depth and detail was used in the interviews with bureaucrats.

The interviews with the telecentre managers and teachers in schools were characterized by specific questions about the results of the policy in order to establish to what extent the policy results of the channels had been successful on the ground and to find out who was involved in implementing the policy on the ground.

The interviews with the bureaucrats involved in the implementation process semi structured in-depth interviews were conducted. A general interview guide was developed, but it certain questions were modified depending on the agency the organisation represented. All the informants were asked about the intentions, structure, process and results of the respective channel they were involved in. In addition, the bureaucrats were mildly ‘confronted’ with the results I had found on the ground in the three poor communities and asked for explanations. In this latter part of the interview all the informants were asked about the results and the explanations from all the channels on the ground. Broadly speaking the central topics explored in the in-depth interviews with the provincial and national bureaucrats were therefore:

- \* Intentions for the different channels
- \* Implementation structure of the different channels Implementation process of the different channels
- \* Results of the policy
- \* Confrontation with the results on the ground and quest for explanations.

All the interviews conducted at the intermediate and national level were recorded and the notes from the interviews at the local level were written out shortly after the interview. Also, a field diary was kept. These documents can be provided if requested.

### 3.4.2 Secondary sources

To get information about household access and usage of ICT in the case communities, I used a survey conducted by the CLIQ project in June and July 2008 in four poor communities. Three of these were the case communities that I investigated and hence it was these results that I used. The survey was the only available data on access and usage to ICT in the three communities and gave valuable information. However, it has certain limitations. Firstly, the sample was relatively small with only 236 respondents. Hence, there is a risk that the results do not give an accurate picture of what is occurring in the communities. Secondly, the survey is not based on randomized selection of respondents. Instead, the questionnaire was conducted on the basis of self-recruitment. A poster was put up outside the telecentre and the interested respondents showed up at a certain time to be interviewed. This might have led to an unrepresentative sample and create biased results. There might be an overrepresentation of people living near the telecentre and actually using the telecentre in the sample. Hence, the respondent in the CLIQ survey might show a higher level of ICT access and usage than in other parts of the same community or in other, similar communities. Consequently the data must be understood in the context of its deficiencies. Table 4 shows the distribution of representatives on the communities.

**Table 4:** Respondents to the CLIQ survey

	<b>Sicabazini</b>	<b>Adams Mission</b>	<b>Inanda</b>	<b>(Inkhlazuka)</b>	<b>Total</b>
Number of respondents	88	47	39	(62)	236

## **4. ICT to the poor policy intentions**

This and the following three chapters constitute the empirical part of the thesis. Each of the chapters answers one of the sub-questions posed in the introduction, which are related to the conceptual framework presented in the theory chapter. This chapter aims to answer sub-question I: What are the policy intentions? Chapter 5 addresses sub-question II: What are the implementation structures and processes in place to carry out the intentions? Chapter 6 answers sub-question III: What are the results on the ground? And chapter 7 attempts to answer sub-question IV: What can explain the results?

The aim of this chapter is to describe the post-apartheid ICT to the poor policy. To this end there three sections. The first section sets out the broader context in which South Africa's ICT to the poor policy was adopted. Section two analyses the policy intentions of the post-apartheid telecommunications policy and how the ICT to the poor policy fits into this. Section three considers the more specific intentions and tools adopted of the pro-poor parts of the policy.

### **4.1 Background**

Throughout the apartheid era the ANC had espoused a socialist ideology. The Freedom Charter (ANC 1955) – the manifesto of the broad anti-apartheid alliance during the struggle against apartheid – advocated the nationalization and redistribution of land and wealth, as well as the provision of free basic services. References to the Freedom Charter and its values were present in the RDP programme, which was adopted as the election manifesto of the Tripartite Alliance prior to the first election. The RDP was a broad development programme that argued for a balance between the state and the market and gave the meeting of basic needs the first priority (Terreblanche 2003:89; Visser

2004:7). A significantly modified version of the RDP election manifesto became the first socioeconomic policy framework in the new South Africa.

The ANC government encountered many problems when they attempted to put the RDP into practice. Some observers have argued that the RDP was broadly formulated and resembled an unrealistic wish list to please everyone (Visser 2004:7). Moreover, it is suggested that the government lacked a specific implementation plan to realise its goals and did not have the implementation skills to put their plans into practice. Bond (2000:90, 97-98) argues that the RDP was ‘fatally undermined by timid politicians, hostile bureaucrats and unreliable private sector partners’. It is clear, furthermore, that South Africa’s economic and fiscal challenges hindered the realisation of the RDP goals. While the government aimed at economic growth of 4-6%, the actual growth rate was only 2.5% (ibid). In the absence of marked economic growth the government did not have the resources to fund the ambitious goals of the RDP.

International financial institutions, such as the World Bank and the IMF, heavily lobbied the new ANC government to adopt a neoliberal macroeconomic policy (Marais 2001; Bond 2000). After the currency crisis in February 1996, when the value of the rand fell by 25%, the government closed down the RDP office and adopted the neoliberal macroeconomic policy framework called the Growth Employment and Redistribution Programme (GEAR) (ibid). GEAR changed the leitmotif of government policy from redistribution to growth. Thus, as economic concerns increasingly dominated government policy, the social goals of the RDP were subordinated to the desire for rapid economic growth (Visser 2004:8). The essence of the GEAR was to reduce the role of the state and focus the reduced state budget on meeting the basic needs of the poor, while allowing the market and the private sector to take the leading role in the development of the country. Visser summarized the GEAR as follows:

economic development in South Africa should be led by the private sector;  
the state should play a smaller role in the economy; state-owned assets should

be privatized; there should be deep cuts in government spending; international competitiveness and an export orientated economy should be encouraged; of exchange controls should be relaxed; and social service delivery budgets and municipal infrastructure programmes should be reprioritized in order to address the claims of the poor to a fair package to meet their basic needs' (ibid:9).

A central intention of the GEAR was that, at the same time as their budgets were reduced, the departments were required to extend services to the previously disadvantaged and under-served areas. To achieve this, the government had to move out of service delivery that could be more effectively delivered by the private sector. It had to establish public–private partnerships to increase efficiency and improve access to capital and new technologies and it had to raise funds from privatisation should be used to reduce the budget (Mokate 2000:63).

On the one hand the GEAR reduced the role of the state in service delivery, and on the other it increased the privatization of state companies and outsourcing of service delivery functions to private companies, NGOs and communities in order to cut costs. In some instances big companies with a large amount of capital were brought in, while in others contracts went to local black economic empowerment initiatives. In yet others, the service was outsourced to communities who were expected to manage a library or a park on volunteer labour with severely reduced budget allocations (Pape and McDonald 2002:6). The end result was that 'Literally - hundreds of services previously provided by provincial and local municipalities were handed over to private providers - from the bus service in Durban, to the storm water drains in Middleburg to the motor-vehicle registration in the Northern Cape, to street sweeping in Cape Town' (ibid:6).

Thus, it is apparent that the transition to GEAR significantly changed the emphasis of South African macroeconomic policy from redistribution to growth, from state to market, from democratic to technocratic politics and from a universalistic model of service delivery to a targeted model of service delivery.



In contrast to the RDP programme, which was developed through negotiations with the South African Communist Part (SACP) and the Congress of South African Trade Unions (COSATU), the GEAR was developed by a task team of technocrats. This had created considerable disagreements within the tripartite alliance because it went along way in arguing for privatisation and liberalisation to which the SACP and COSATU were vehemently opposed. As a result, while the underlying economic and political principles of policies and acts were informed by the neoliberal principles of the GEAR, they often continued to include the goals and the populist rhetoric of the RDP, (Pape and McDonald 2002). This inherent ambiguity is a clear in the development of the post-apartheid telecommunications policy, of which the ICT to the poor policy was a part.

## 4.2 The politics of ICT to the poor policy intentions

Broadly speaking, the ICT to the poor policy has been a part of four policy reforms. The first was in 1996 when the government adopted the White Paper on Telecommunications (1996) and the Telecommunications Act (1996). The second was in 2001, when this was amended by the Telecommunications Amendment Act (2001) and its policy directions. The third was in 2004 when the launching of the White Paper on E-education (2004) was adopted. The fourth was in 2005 with the adoption of the Electronic Communications Act (2005).

In 1996, South Africa adopted the first White Paper on Telecommunications (1996) and Telecommunications Act (1996) in the post-apartheid era. These two documents became the first legislative telecommunications reform in South Africa. The vision of the White Paper reiterated the goal of the RDP programme to achieve universal access to telecommunications services (see chapter 1). But the new vision it presented reflected the transition from RDP to the GEAR and emphasized a wish to balance the provision of telephone

services to poor households in previously disadvantaged areas with those of the growing economy and the private sector:

The state's vision for telecommunications is one that balances the provision of basic universal service to disadvantaged rural and urban communities with the delivery of high-level services capable of meeting the needs of a growing South African economy (Ministry of Post, Telecommunications and Broadcasting 1996:17.1.1).

The state recognizes the central importance of access to telecommunications to the achievement of its social and economic goals. Affordable communications for all, citizens and business alike, throughout South Africa is at the core of its vision and the goal of this policy (ibid:17.1.2).

Like in many other developing countries at the time, the central intention of the telecommunications policy in South Africa was the gradual liberalisation of the telecommunications sector and a part-privatization of the state-owned telecommunications company, Telkom. Telkom was given 5 years of monopoly up to 2001. The intention was to give Telkom time to extend the fixed line network and prepare for competition through the rebalancing of its tariffs. After that, the market would be gradually liberalised and competition introduced in a phased manner in the various segments of the market until full liberalisation was achieved.

The Telecommunications Act (1996) decided to partly privatise Telkom by selling of 30% of its equity to private business. The Congress of South African Trade Unions (COSATU), that had represented the Tripartite Alliance<sup>2</sup> in the negotiations with the apartheid regime on the telecommunications issue during the transition, had opposed the privatization of state-owned enterprises because of its perceived negative effects on the socio-economic interests of the poor and the working class. The alliance feared that if a profit-motivated private company owned a large proportion of Telkom the goal of universal access would be undermined (Benjamin 2001:97). However, the logic of the newly

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<sup>2</sup> The Tripartite Alliance was an alliance between the ANC, the South African Communist Party (SACP) and Congress of South African Trade Unions (COSATU).

adopted GEAR policy framework saw privatisation as necessary in order to attract investment and skills, which were needed to achieve the development goals of the RDP without increasing public spending and raising tax levels. With the large debt that Telkom had developed throughout the 1980s, further borrowing was not a realistic proposition (ibid). Hence, the ANC agreed to the privatisation of Telkom and in 1997 30% of Telkom's shares were sold to SABC and Telkom Malaysia (Benjamin 2001:93). Since then further shares have been sold off and in 2010 the government retained a 39.8% stake in Telkom (Telkom official website 2010).

The central strategy of the telecommunication policy as sketched out above was to gradually liberalise the market and attract foreign investments through a privatisation of state assets. The White Paper did, nevertheless, acknowledge that market processes alone were insufficient to address the needs of the poor in previously disadvantaged areas because these were unprofitable:

The apartheid system left the vast majority of black South Africans, particularly in rural communities, without access to basic communications services. Liberalisation trends associated with the spread of the global information highway and the legitimate needs of South African business and urban areas for advanced services could easily combine to draw interest and resources away from the delivery of service to rural and disadvantaged areas (Ministry of Post, Telecommunications and Broadcasting 1996: 18, 1.13).

The policy explicitly recognized the particulars of South African circumstances and proposed targeted measures to enhance access among the poor and previously disadvantaged in the context of liberalisation:

While universal service is a global concern, it is located within a unique context in South Africa. Nowhere else does such disparity of access exist side by side with a developed communications technology sector. Nowhere else are both access and ownership concentrated so heavily in one population group. These imbalances, which are the legacy of apartheid, must be urgently redressed. Members of historically disadvantaged communities, and particularly those in rural areas, must be the immediate targets for the delivery of universal service (ibid:1.14).

The overall goal of the South African Telecommunications policy was Universal Service for all. However, the choice of strategy was influenced by the ANC's transition to GEAR, which resulted in a strategy of market liberalisation and privatisation to attract foreign direct investments. While the market catered for the wealthier part of the population, it was proposed that the newly emaciated state would concentrate on and channel its limited budgets towards providing access in previously disadvantaged communities. This was to ensure that the poor and unprofitable groups would not be left out in a liberalized environment. Hence, although the vision was access for all, the strategy chosen was liberalisation and privatisation combined with a targeted model of service delivery to the poor.

### 4.3 The ICT to the poor policy intentions and tools

The White Paper of Telecommunications (1996) and the Telecommunications Act (1996) had a strong focus on providing telecommunications services in poor households.<sup>3</sup> The key tools adopted in the Telecommunications Act (1996) in order to achieve this objective was (i) Universal Service Obligations (USOs) placed on private operators and (ii) a Universal Service and Access Fund (USAF)<sup>4</sup> dedicated to paying subsidies for the provision of telecommunications to 'needy persons' or 'un-served areas'. The key implementing agents established were (i) an independent regulator called the Independent Communications Authority of South Africa (ICASA),<sup>5</sup> which was in charge of issuing licenses with USOs, and (ii) the Universal Service and

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<sup>3</sup> Universal service refers to access in the household, while 'universal access' refers to access to ICT on an institutional basis.

<sup>4</sup> The fund was originally called the Universal Service Fund (USF), but the name was changed to Universal Service and Access Fund (USAF) and this name will be used in this thesis to avoid confusion.

<sup>5</sup> The regulator was originally called South African Telecommunications Regulatory Authority (SATRA), but was later renamed ICASA and ICASA will be used in this thesis to avoid confusion.

Access Agency of South Africa (USAASA),<sup>6</sup> which was in charge of managing the USAF. These tools and structures will be discussed more thoroughly in the next chapter.

The goals in the Telecommunications Act (1996) were broad and poorly defined. Hence, USAASA was forced to clarify definitions for terms such ‘universal service and access’, ‘needy persons’ and an ‘un-served area’ to ensure that the sector was working towards the same goals. The first attempt was in 1999, USAASA released a discussion document defining ‘Universal Service and Access’ and setting specific targets. It suggested that the long-term goal of the sector should be that every household had access to fixed line services. However, no time frame was set for the achievement of this long-term goal. The intermediate goals proposed in the discussion document were:

- Everyone should have a working phone accessible 24 hours a day within 1 kilometre in rural areas and 200 metres in non rural areas by 2004 (USAASA 1999:14).
- There should be full cellular network coverage by all operators over the entire territory of South Africa by 2001 (ibid:11).
- Every community should have access to a telecentre type facility that gives access to facilities such as fax, photocopying, computers and the internet by 2004 (ibid).

However, according to my informants, this document was never adopted by the DoC . No new discussion document was launched by USAASA until 2008 and this stated that:

There has been a general consensus in the country’s ICT industry that universal service in South Africa has been addressed in an uncoordinated manner. For example, there has never been a complete process to define universal service and access. Secondly, each telecommunication operator has a separate definition of an under-served area, as well as different roll out targets and community service obligations. Third, there is no formal definition of needy persons and no set criteria which can be used to disburse funds to serve these needy people. All these factors, as well as others not mentioned in this document make it difficult to assess if the objectives of the

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<sup>6</sup> The agency was originally named the Universal Service Agency (USA), but the name was later changed to Universal Service and Access Agency of South Africa and this will be used here.

Telecommunications Act of 1996, especially those related to universal service and access, have been achieved (USAASA:2008d)

In 2002, the Telecommunications Act (1996) was amended by the Telecommunications Amendment Act (2001) and its policy directions. The objectives of the policy directions remained the provision of universal service in households, but in addition it added a new goal of universal access to more advanced ICTs through institutions such as in telecentres and computer labs in schools in disadvantaged communities (Department of Communications 2001:1).

In order to achieve these, the provision of ICT to schools and telecentres was included in the mandate of the USAF, the provision of internet to schools was included in the USOs, and a new tool called the 'E-rate' was adopted which aimed to give all public schools a 50% E-rate discount on internet services. These tools will be discussed more thoroughly in the next chapter. In addition, the Telecommunications Amendment Act called on the Minister of Communications to 'Develop the Information, Communication and Technology (ICT) strategy for information technology in the Republic, in order to bridge the digital divide' (Republic of South Africa 2001:2s).

However, despite the fact the 2001 Act called specifically on the minister of communications to develop a strategy to bridge the digital divide (ibid), this has not happened. A consultant who had many years of experience of the South African ICT industry expressed it this way:

There is no overall national ICT policy for bridging the digital divide that defines roles and responsibilities and coordinates between the different actors involved. There has been an ongoing process to develop a national E-strategy for a long time. However, no policy has been drafted. This is because of the high level of conflict in the sector around issues such as which government department should be the main player, the role of the private players involved, bad planning and no overall vision from the government's side. The result is that there is no coordination. There is no coordination between the various government actors on the national level, at the sector level and from the national actors down to the provincial and municipality level and between actors at the local level (Interview 25).

In 2005 the Electronic Communications Act was launched and replaced the legislative framework outlined above (Republic of South Africa 2005). It introduced a new licensing framework suited to technology convergence and aimed to create a fully liberalized market. However, the intentions, tools and institutions of the ICT to the poor policy remained the same and hence this act does not represent a fundamental shift in the ICT to the poor policy. It will not therefore be central to my analysis.

In sharp contrast to the lack of clear objectives and timeframes in the communications sector, the national DoE had launched a White Paper on E-education in 2004. This had as its overall goal of making every teacher and pupil ICT-literate by 2013 (Department of Education 2004). It also included an implementation strategy with clear targets. It stated that by 2007 50% of the schools should have access to a networked computer facility for teaching and learning (Department of Education 2004:40). While the national White Paper is a guiding policy, it has to be specified and implemented at the provincial level. The provincial Department of Education (PDoE) developed a provincial strategy in the KwaZulu-Natal Department of Education. This document specified three priority areas for the delivery of ICT: first, to deliver one computer for administrative purposes to all schools; second, to deliver computer labs to schools; and third, to train teachers in ICT (Interview 28).

In summary, the broad intentions of the ICT to the poor policy seem to have been to provide basic telecommunications services to households, and more advanced ICTs to schools and telecentres in poor communities. These intentions have, in spite of repeated calls, never been specified into a coherent national strategy to bridge the digital divide. According to my informants there have been attempts to develop such a strategy for a long time, but these have floundered due to conflict in the sector. The result was that the communications sector was without clearly specified goals for the entire implementation period between 1997 and 2008. The exception is the White Paper on E-education and the specification and implementation of this at the provincial level.

The central intentions of the ICT to the poor policy and the tools and structures adopted to achieve these intentions are summarized in table 5.

**Table 5:** Intentions, tools and state implementing organisations of the ICT to the poor policy

<b>Documents</b>	<b>Intention</b>	<b>Tools</b>	<b>Implementing Organisations</b>
<b>White Paper on Telecommunications and Telecommunications Act (1996)</b>	‘Universal service’ <sup>7</sup> . Defined as access to basic telecommunication in households	Universal Service Obligations (USOs) and Universal Service and Access Fund (USF)	Independent regulator and Universal Service Agency [USA]
<b>Telecommunications Amendment Act (2001) and Policy Directions (2001)</b>	‘Universal access’. Defined as access to computers and internet in schools and telecentres	USOs, USF and E-rate	Unchanged
<b>Electronic Communications Act (2005)</b>	Unchanged	Unchanged	Unchanged
<b>White Paper on E-education</b>	Every teacher and pupil to be E-literate by 2011	USOs and direct delivery by Provincial Department of Education.	Independent Communications Authority South Africa (ICASA) Provincial Department of Education
<b>Provincial ICT/Math, Science and Technology strategy</b>	Provide computers and computer labs to schools and train teachers	Direct delivery by Provincial Department of Education.	Provincial Department of Education

These policy intentions led to a complex implementation structure consisting of three implementation channels: the telecentre channel, the market channel and the education channel. The next chapter will more thoroughly describe the tools and structures adopted in the ICT to the poor policy and the resulting process.



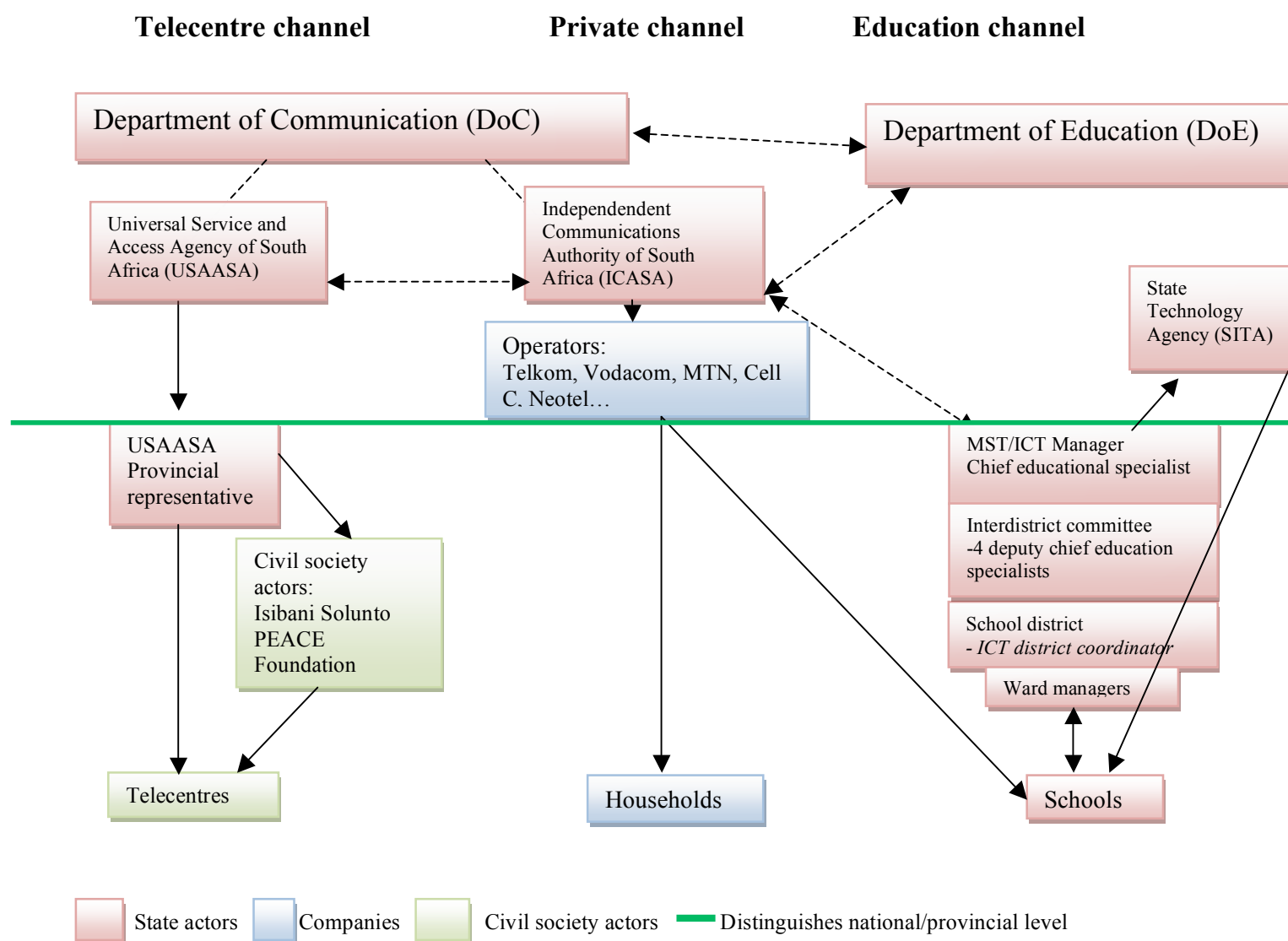
## **5. The implementation of the ‘ICT to the poor’ policy**

This chapter answers sub-question II set out in the introduction: How is the policy implemented?

A key focus of the 1996 Telecommunications Act and its amendment in 2001 was the provision of ICT access to the poor in previously disadvantaged areas. These policy documents set out a policy design, which specified several tools with different delivery structures that were to be adopted in order to achieve the policy objective. These tools and structures frame the implementation process in terms of the activities and the behaviour that follows the adoption of the policy design.

The chapter will first set out the general implementation structure for the pro-poor policy intentions which consists of three implementation channels with different tools, structures and processes. Thereafter, it will discuss the tools and structures chosen and the resultant implementation process for each implementation channel. The final part of this chapter will discuss the structural characteristics of each channel.

Christensen et al. (2007:37) distinguish between simple and complex organisational structures. A simple structure consists of few positions and subunits related in a straightforward way. A complex structure, on the other hand, has many levels, many units and many horizontal and vertical links. Figure 4 attempts to convey the complexity of the ICT to the poor policy implementation structure in visual form. It is apparent that the implementation structure consists of many units on different levels with numerous vertical and horizontal links. It also cuts across two sectors, the communications sector and the education sector.



**Figure 4:** ICT to the poor implementation structure

Structures can be closely integrated or may consist of several autonomous agencies (Christensen et al. 2007:37). Implementation structures can also be centralized or decentralized both with respect to the level on which decisions are taken and with respect to the administrative implementation structure (ibid). The communications sector and education sector had different organisational structures both with respect to the extent of centralisation and the degree of integration between units.

The communication sector had a loosely integrated and centralized implementation structure. It had a loosely integrate structure at the national level and at the local level. At the national level, the public authority was divided between the DoC as the policy maker and its two national and relatively autonomous implementing agents. These were an independent agency called USAASA and an independent regulator called ICASA. They will be discussed below. At the local level, the implementation structure was also loosely integrated and involved third parties such as NGOs or private companies, which will be discussed below. The communications sector was also centralized. The key implementation organisations were located at the national level. Local implementation structures were very weak and relied on cooperation with third parties. This will also be discussed more thoroughly underneath.

The education sector had a very different structure. Firstly, it had a decentralized political and administrative structure where decisions were taken and implemented at the provincial level. Moreover, the education sector had a closely integrated, hierarchical structure where implementation takes place at various levels within the provincial Department of Education.

As seen in the figure above, the telecentre and the market channels fell with the remit the DoC . The educational channel on the other hand is located within the Department of Education.

The specific tools and structures chosen to carry out the ICT to the poor policy intentions and the implementation processes these produced will be discussed in the following three sub-chapters. Each sub-chapter discusses the tools, structure and process of one of the three implementation channels. The chapters distinguish between the tools and structure of the implementation channels, on the one hand, and the process on the other. However, the distinction between structure and process are sometimes fuzzy in reality.

## 5.1 Telecentre channel

### Structure

The Telecommunications Act of 1996 established a Universal Service and Access Fund (USAF).<sup>8</sup> USAF subsidies constituted a key tool to provide ICT to the poor. The fund was financed by annual contributions from ICT operators. The Telecommunications Act of 1996 focused on improving access to basic voice telephony for needy persons and un-served communities. The mandate of the USAF in the 1996 Act was to subsidise the following:

- To assist needy persons towards covering the cost of provision and usage of telecommunications (Republic of South Africa 1996:60.1).
- To subsidise telecommunications companies with universal service obligations to roll out networks and services to un-served communities (ibid).

The Telecommunication Amendment Act of 2001 added a focus on more advanced ICTs and included the following responsibilities to the mandate of the USAF:

- To subsidise the procurement of internet services and equipment by public schools (Republic of South Africa 2001:66)
- To subsidise the establishment of telecentres and information terminals in disadvantaged communities (ibid).
- To assist small businesses and cooperatives to provide telecommunication services in disadvantaged areas (ibid).

The Telecommunications Act of 1996 also established a Universal Service and Access Agency (USAASA)<sup>9</sup> to manage the fund. The agency was an autonomous central agency located in the capital Pretoria and had only one representative in each of the nine provinces. Hence, it was a fairly top heavy

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<sup>8</sup> The fund was named the Universal Service Fund in the Telecommunications Act of 1996 and renamed Universal Service and Access Fund (USAF) in 2005. This thesis will use the latter name to avoid confusion.

<sup>9</sup> The agency was named Universal Service Agency in the Telecommunications Act of 1996 and renamed the Universal Service and Access Agency in 2005. This thesis will use the latter name to avoid confusion.

and centralized organisation and was forced to rely on third parties on the ground to delivery ICT access and services to the poor. It had a loosely integrated structure that required cooperation with the DoE and ICASA on the national level and third parties on the local level.

## Process

Since its inception in 1997, USAASA had chosen to use the fund to establish telecentres in previously disadvantaged communities, although this was considered to be on the periphery of its mandate at the time. The decision was taken because of the difficulty of defining ‘needy persons’ and because the agency wanted to be in forefront of showing that people in disadvantaged communities benefit from using ICT (Interview 10). Telecentres consisted of approximately ten computers, a copy machine, printer, fax machine, internet, furniture and security measures. They were mostly established in existing buildings such as community halls, although some of the newer ones were established in schools or government information centres.

USAASA provided between 150,000 and 200,000 Rands (120,330 and 160,440 NOK) for equipment and technology per centre and established them in cooperation with local community organisations in disadvantaged communities. USAASA provided help to set up the business and pay for the first year of internet connection. After that, the ownership of the centre should be transferred to the local recipient and they would be given complete responsibility for managing the centre. The centre was supposed to be run as a small, self-sustainable business and cover its own expenses through charging end-users or by obtaining subsidies from local government or private sponsorship:

The telecentre is established in collaboration with the local community Non-Governmental Organization. The NGO applying to operate and manage the Telecentre must be supported by the GCIS<sup>10</sup> and the Local Government. The

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<sup>10</sup> Government Communication and Information System (GCIS).

community-based organization can also apply for a Telecentre located in various community development centres. Ownership and management rests entirely with Community-based Entrepreneurs in partnership with the local government and private corporate sponsorships where the Telecentres are established and registered as a non-profitable entity. Revenue generated is used for the payment of expenses and acquiring additional equipment (USAASA 2005:9).

## 5.2 Market channel

### Structure

A central intention of the Telecommunications Act of 1996 was to extend the fixed line and the cell phone network in order to provide access to basic telephone services to households and pay phones in poor communities. The tools adopted to achieve this were the Universal Service Obligations (USOs). The USOs were obligations given to the operators as a part of their license or in exchange for certain government benefits such as access to bandwidth. The operators were compelled to provide infrastructure and services to poor communities. The 2001 Amendment Act introduced a focus on internet access in schools. The provision of internet to schools was included in the USOs and a new tool called the 'E-rate', which was a 50% discount rate to all public schools on internet services, was introduced.

An independent regulator called the Independent Communications Authority in South Africa (ICASA) was responsible for issuing licenses to the private operators. ICASA therefore administered the USOs and was responsible for monitoring the companies' compliance. The implementation of the USOs relied on the cooperation of private and quasi-public operators in the market.

The context of the USOs was a strategy of gradual liberalisation of the telecommunications sector in the post-apartheid era, as described in section 4.2. The aim was to gradually move from a sector dominated by Telkom as the monopoly incumbent, through a process of liberalisation where new entrants were gradually introduced to enhance competition, to full liberalisation.

Telkom had an official monopoly in the fixed line sector between 1996 and 2001 and MTN and Vodacom had a duopoly in the mobile sector. The Amendment Act in 2001 introduced several new licenses and officially ended Telkom's monopoly and the duopoly in the mobile sector. The Electronic Communications Act of 2005 introduced a new licensing framework that cleared the way for full liberalisation and technology convergence. Hence, the issuing of the USOs followed these three phases from monopoly through managed liberalisation to full liberalisation.

## Process

In the first round of legislation in 1996, Telkom was given the prime role in the universal service and access policy. It was given extensive USOs during its five year monopoly. The two mobile companies were not given new obligations, but they had been given obligations when their licenses were granted in 1993 (Benjamin 2001; Hodge 2003:2). The obligations on Telkom, MTN and Vodacom are summarized in table 6.

**Table 6:** Universal Service Obligations after the first round of legislation in 1996

	<b>Roll out obligations</b>	<b>Community service obligations</b>
Telkom	2.69 million new lines of which: - 1.676 million should be in households in underserved areas. - 20,246 was for priority customers - 3,204 villages	120,000 pay phones
MTN	60% of the population coverage in 2 years 70% of population coverage in 4 years	7,500 community service telephones in underserved areas Low community service tariff
Vodacom	60% of the population coverage in 2 years 70% of population coverage in 4 years	22,000 community service telephones in underserved areas Low community service tariff

Source: Hodge 2003:3-4.

The Telecommunications Amendment Act of 2001 invited companies to tender for a second network operator to compete with Telkom in the fixed line segment. It also issued a license to a mobile company called Cell C. In addition, it gave the state-owned company Sentech a license to provide internet services using satellite technology. All these operators were given USOs as a

part of their license to roll out networks, connect schools, and establish pay phones. These obligations are summarized in table 7.

**Table 7:** Universal Service Obligations after the second round of legislation in 2001

	<b>Roll out obligations</b>	<b>Community Service obligations</b>
Cell	8% geographic coverage in 5 years 60% of the population in 5 year.	52,000 community service telephones in underserved areas over 7 years. Low community tariffs
Sentech multimedia		500 internet labs in rural schools over 5 years
SNO	Coverage of all metropolises in 5 years 80% of territory in 10 years	30,000 community service telephones in rural areas over 10 years 2,500 internet labs in rural schools over 5 years.

Source: Hodge 2003:3-4.

More recently, it had been decided that that the mobile operators should have extensive roll out obligations attached to their licenses in exchange for a 15 year access to the 1,800 megahertz and the 2.4 gigahertz spectrum. A list of USOs formed part of their obligations. These included the provision of 250,000 free cell phones and 4 million free SIM-cards over 5 years, as well as public payphones and internet labs in schools (Hodge 2003:5). The Head of the Compliance Unit within ICASA explains:

All mobile operators had to interconnect at least 2,500 schools, the second fixed line operator had to connect 200 schools and one of the major ISPs had to connect 2,500 schools. The obligations were imposed in exchange for the granting of sought-after spectrum in the 2.5gigahertz band. It was not imposed on operators by virtue of the licence they held (Interview 45).

More recently, the market channel seemed to have turned to more direct policy tools, such as using state-owned companies, to provide services to the poor. In 2006, the Minister of Communications announced that the state-owned satellite signal distributor Sentech should become the cornerstone in bridging the digital divide and lowering the cost to communicate by rolling out a national wireless broadband network to disadvantaged areas using WiMax technology. The full implementation of a national network covering schools,



hospitals, clinics and Thusong centres<sup>11</sup> was anticipated to be completed in 2009. In addition, the Department of Public Enterprise established a new state-owned enterprise called Broadband Infraco to roll out a fibre optic network. Broadband Infraco was licensed in October 2009 and given extensive USOs with clear targets, timeframes and a list of disadvantaged areas (ICASA 2009).

It is apparent from this account that the regulatory framework became increasingly complex in the aftermath of the second legislative reform with the different operators having different USOs. What is more, the regulations also lacked a compliance system, which made surveillance and enforcement difficult for the regulator. Consequently the companies could get away without fulfilling their obligations. The Head of the Compliance section in ICASA explained:

Our telecoms compliance monitoring division was largely impaired by the difficulty in implementation of the various regulations and licence conditions that existed in terms of the previous dispensation. Although we had the express imposition of obligations, we did not previously have a system that ensures that we can effectively monitor compliance with the obligations. The same did not apply for the broadcasting environment. As a result, we are now moving to a model where regulations and obligation-imposing publications must spell out a compliance model. This will allow operators to know the extent to which they must comply and will assist the authority in identifying elements that must be monitored to ensure that we can measure whether there is compliance with a particular obligation (Interview 45).

In the aftermath of the third legislative reform in 2005 the regulator started a process to review the universal service and access obligations. The new policy framework required all operators to have equal right and obligations, whereas under the previous dispensation they all had different obligations. This process was not yet finalized at the time when I conducted the fieldwork. The Head of the Compliance Section explained what was happening:

Since the passing of the new legislation in 2005, all those licensees essentially have equal rights in theory. However, the obligations are still not equal. We are currently in a process of reviewing the obligations imposed, the effectiveness of the structure of the obligations and the fairness of continuing the disparate distribution of obligations. Depending on the

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<sup>11</sup> The South African Government has tried to gather government services and information from different departments under one roof in so-called Thusong centres in rural areas.

outcome, the model of USO implementation may be reviewed and amended (Interview 45).

To summarize, the regulatory framework for the implementation of the USOs had become increasingly complex as the process of managed liberalization unfolded. These different USOs had not been backed up with a compliance model and were, therefore, very difficult for the regulator to implement.

## 5.3 Education channel

### Structure

Unlike the two other channels, the education channel was under the Department of Education. The education channel had a typical hierarchical implementation structure. The educational bureaucracy in KwaZulu-Natal consisted of hierarchically organized geographic units. On the top was the PDoE which developed policies, strategies and budgets based on national guidelines and provincial priorities. The PDoE was located in the provincial capital Pietermaritzburg and responsible for the 6,000 primary and secondary schools in the province. Below the PDoE, there were 12 school districts; below the districts, there were a number of circuits; and below the circuits a number of even smaller units called wards.

The structure for delivering ICT to primary and secondary schools was called the ICT and Math, Science and Technology (MST/ICT) structure. This existed within the provincial educational structure described above and was similarly hierarchical. On top of this structure was the manager of ICT/MST in the PDoE and under him the Chief Education Specialist. The manager was the one responsible and accountable. Subordinated to him was an inter-district committee consisting of four Deputy Chief Educational Specialists on ICT who were responsible for three districts each. The manager and the inter-district committee were responsible for planning and budgeting. These had the operational planning and budgeting functions. Subordinated to this, each

district appointed one of its Chief Educational Specialists as the ICT coordinator of the district. Under him was the ward manager who was also responsible for ICT. The responsibility of the coordinators and ward managers were to assess the 'e-readiness' of schools, to identify schools without computers and to monitor and provide support to the schools with computers. The State Information and Technology Agency (SITA) was responsible for purchasing and delivering the computers.

From my fieldwork it is apparent that the education channel, in contrast to the two others, had a decentralized and integrated structure. The goals of the channels were specified in provincial strategies, it was funded by government allocations and computers were delivered directly through a hierarchical bureaucratic implementation structure within the PDoE. It used direct tools for service delivery and generally did not rely on third parties.

## Process

The process of recruiting and delivering ICT to schools through the educational channel were characterized by vertical chains of command and control. The ICT manager and the inter-district committee made the plans and budgets for the delivery of computers based on the annual government allocations. The committee decided on a quota of computers and computer labs that should be delivered based on these plans and budgets. For example, in 2008 the quota in KwaZulu-Natal was 20 computer labs. These 20 computer labs were divided equally among the four inter-district committee-members. Thus, they were given five cyber labs each to be distributed to schools in their respective districts. The department directed its efforts towards previously disadvantaged areas and all the computer labs provided by the channel were established in poor communities. The Head of the MST/ICT section in the PDoE explained:

The rural-urban divide is a big problem, which historically corresponds with white and black schools. We distinguish between schools in the richer and better areas and the ones in previously disadvantaged areas. The advantaged schools are 30% of the schools in KwaZulu-Natal or 1,200. All of them have computer labs and 80% have internet. Therefore we focus on the remaining

4,800 schools in KwaZulu-Natal that are disadvantaged schools (Interview 27).

The identification of schools to receive computer labs was made on the basis of lists and recommendations from the lower levels of the bureaucracy. The ward manager at the bottom of the hierarchy compiled a list of schools that were lacking ICTs in their ward and assessed their level of 'ICT readiness', which included electricity and security. These lists and recommendations were sent to the ICT coordinator in the district. He compiled a list of all the schools that lacked ICTs and sent this to the district committee. The district committee then made a decision based on the criteria of need and level of e-readiness that included security measures, electricity and the level of ICT knowledge among the teachers. There were, however, allegations among my informants that clientalist politics and networks influenced which were chosen schools. For example, the Deputy Chief Education Specialist of Umlazi stated:

Both Ochlangeni and Adams Mission are important schools that are favoured by politicians. They have a long history, many politicians went there and therefore they have high priority. The ex-Minister of Health went to Adams Mission and the founder of the ANC went to Ochlangeni (Interview 37).

After identifying schools, the district committee sent the final list further up the hierarchy where the right signatures from various officials had to be collected. Thereafter, the state-owned SITA was responsible for purchasing and delivering the ICT equipment to schools. A problem stressed by several of my informants was the time-consuming process of procurement, which meant that the schools had to wait very long before they got their computers. The Deputy Chief Education Specialist ICT in the inter-district committee stated:

Procurement is a big problem and it is making things take so long. Reporting has to go through so many people before it reaches the destination. I think things would move much faster if it weren't for that. In fact, the CEO has not signed the document allocating the 48 computer labs for this year yet. So we have to be patient and wait for orders. When the document is signed and the SITA has delivered the computers to the schools then we go and monitor (Interview 39).

Another problem was the limited capacity and high prices of SITA which was the government body in charge of purchasing and delivering the computers for

the PDoE. One of the Chief Education Specialists in the inter-district ICT Committee stated:

We decide based on the budget, level of e-readiness and the number of schools in the district, the number of computers and computer labs that should be distributed per district. Then we send the list to SITA, which is the government body buying and delivering computers. However, they are charging the DoE to do this and it is ripping us off. They also have little capacity. They are a small body and there are so many service providers (Interview 39).

The PDoE delivered new computer labs as a one-time grant with a two-year warranty. Beyond that, the schools had to cover the cost of maintenance and repairs with their school budgets. It was up to the school to operate the computers, but the ICT coordinators monitored and supported those schools with the computer labs.

The process described above shows that the hierarchical implementation structure created an implementation process characterized by vertical chains of command and control. The implementation process was controlled from the top where provincial political authorities set the targets and allocated budgets and the bureaucrats involved in implementation had clearly specified roles.

## 5.4 The characteristics of the channels

Table 8 summarizes the specific characteristics of the three channels.

**Table 8:** Delivery channels for the ICT to the poor policy in South Africa

<b>Channel</b>	<b>Tool</b>	<b>Delivery system</b>	<b>Product</b>	<b>Receiver</b>	<b>Target groups</b>
<b>Telecentre channel</b>	USF subsidies	USAASA in cooperation with Non-profit organisations	Telecentre packages consisting of 10-15 computers, a printer, copy machine and internet + occasional operational subsidies	Organisations, entrepreneurs or schools in poor communities	The inhabitants in previously disadvantaged communities
<b>Private channel</b>	USOs E-rate USALs	Private operators in the market and the regulator ICASA	Computer labs, telephone and cell phone services	Schools and households in poor communities	The inhabitants in previously disadvantaged communities
<b>Education channel</b>	Direct government delivery	Provincial Department of Education (PDoE)	Computers and teacher training	Schools in poor communities	Pupils and teachers in previously disadvantaged communities

The telecentre channel relied on USF subsidies as its key tool for service delivery to the poor. The USF subsidies were used to establish telecentres in poor communities in cooperation with local community actors.

The private channel employed USOs as its key tool. The USOs relied on private, quasi-public and public companies for delivery. The product delivered by the market channel varied, but seemed to focus on voice telephony in households and computer labs with internet to schools in disadvantaged communities.

The education channel relied on direct delivery through the PDoE. The product it delivered was computers and teacher training. The recipient institution was the schools, which were at the bottom of the bureaucracy. The target group was pupils and teachers in schools in disadvantaged communities.

The channels can be said to have different structural characteristics. These are summarized in table 9.

**Table 9:** Characteristics of the three implementation channels

	<b>Degree of centralization</b>	<b>Degree of integration</b>	<b>Degree of directness</b>	<b>Structural model</b>
Telecentre channel	Centralized	Loosely integrated	Indirect	Network
Market channel	Centralized	Loosely integrated	Indirect/direct	Market
Education channel	Decentralized	Closely integrated	Direct	Hierarchy

The telecentre channel had a centralized and loosely integrated implementation structure. It consisted of USAASA, an autonomous single-purpose central implementation agency that delivered telecentres to local third parties. Its local implementation structure consisted of one person per province. The channel was also largely indirect since it relied on capacitated third parties on the ground for the successful delivery of services to the poor. Since successful implementation on the ground relied on the cooperation between local actors and USAASA, the channel can be said to have a network structure. In this structure the USAASA should be a financial institution paying subsidies to third parties that would implement the policy. Hence, the agency did not need strong local structures. However, as the implementation process shows, USAASA chose to purchase and deliver telecentres itself to organisations in local communities. These organisations often lacked the capacity to manage the centres and hence, the USAASA had continued to stay involved to provide support to the local organisation. USAASA nevertheless lacked the local structure and capacity to do this properly.

The market channel also had a centralized and loosely integrated structure. It consisted of a central independent regulator who was supposed to manage the process of phased liberalisation. A part of this was the issuing of new licenses with universal service obligations. The regulator utilised quasi-public

(Telkom),<sup>12</sup> private (the cell phone companies) and public (Sentech) companies for implementation. It can thus be argued that the USOs are an indirect tool since it relies on companies operating in a competitive market. It is apparent, however, that the nature of the ownership affects the nature of the service delivery. It can be argued that when the USOs were applied to the state-owned company Sentech they were more direct than when they were applied to the private cell phone operators or the increasingly privately-owned Telkom (Telkom 2010). It can be said that the degree of indirectness of the USOs increased in the post-apartheid era as the policy of managed liberalisation unfolded. The notable exception was the USOs of the state-owned companies Sentech and Infraco. The USOs thus had different degrees of directness depending on the ownership of the company.

Since the channel depended on companies operating in the market, it can be said to utilise a market structure. In order for this structure to work effectively a strong and capacitated regulator is required to negotiate licences with universal service obligations with the big companies dominating the sector (Telkom, MTN, Vodacom, Cell C). It also needed a capacitated compliance section to monitor the companies' compliance with the USOs and sanction them in cases of non-compliance. However, as shown above, the regulator struggled with capacity problems and was not capable of implementing the increasingly complicated regulatory framework. Also, the compliance section within the regulator was weak and lacked the capacity to monitor the companies' USO compliance.

The educational channel and its decentralized and tightly-integrated hierarchical structure stood in sharp contrast to the two other channels. Both political and administrative authority was decentralized to the provincial level. The provincial government adopted provincial plans with clear targets,

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<sup>12</sup> As discussed in chapter 4.2 Telkom was gradually privatized in the post-apartheid period. In 1997, 30% of Telkom's shares were sold to SABC and Telkom Malaysia. It has been further privatized and in 2010 the government had a 39.8% stake in Telkom (Telkom official website 2009).



timeframes and budgets. These were implemented through the hierarchically organized provincial education bureaucracy. In the case of the ICT priorities this was the MST/ICT, which consisted of tightly integrated subunits. Since the educational bureaucracy and the state-owned agency SITA were responsible for the delivery of computers to schools, the channel can be said to rely on direct tools. This implementation structure consisted of clear vertical lines of control and demand and ensured political control over the implementation process.

## 6. Results on the ground

This chapter answers sub-question III in the thesis: what are the results of the policy on the ground?

The first three sections respectively consider the telecentre, education and market channels. Each of these sections has an introduction that outlines the overall intention of the channel and the results of the channel at the national and provincial level. In each section this is followed by a presentation of the specific results on the ground in the schools, households and telecentres in the three case communities. The fourth and final section examines the outcome of all the three channels by looking at usage levels of computers and internet in the three case communities. Based on the intentions of the three channels, some indicators have been developed to assess their performance. These are presented in table 10.

**Table 10:** Performance indicators for the three implementation channels

	<b>Telecentre channel</b>	<b>Market channel</b>	<b>Education channel</b>
1.	The number of telecentres established by the Telecentre channel	The companies' fulfilment of USOs	The number of computer labs established by the educational channel
2.	The number of operating telecentres in the three case communities that provide basic telecentre services	The % of households with a cell phone in the three case communities	The number of schools with cyber lab in the three case communities
3.	The number of training courses per week in the telecentres in the three case communities	The % of people who used a pay phone within the past six months in the three communities	The number of schools with trained teachers in the three case communities
4.	The number of users per centre per day	The number of schools with computer lab connected to internet in the three case communities	
5.	That services are subsidized	The number of schools that receive E-rate in the three case communities	
6.	The number of paid staff in the telecentres in the three case communities		
7.	Whether the telecentre managers thought the telecentre was successful		

The results in the telecentre and the schools will be assessed on the basis of the interviews and observations conducted during fieldwork, as well as data from annual reports where available. The results of the market channel, on the other hand, will be discussed based on secondary data such as research reports and data collected in the CLIQ survey on household access to ICTs in the three case communities. The reason for this asymmetry is that the market regulator did not publish results on their website nor in readily accessible annual reports. In fact, even the head of the compliance section in ICASA did not know to what extent the companies had complied with their USOs (Interview 45). The CLIQ data are, therefore, used to show the results on the ground because these give a good impression of household access levels in the three case communities.

## 6.1 Telecentre channel

The policy intentions of the telecentre channel were to establish telecentres in disadvantaged communities in order to provide various ICT services to the poor. By 2008, eleven years after its inception, the telecentre channel had only established 389 telecentres in the whole country. Of these, 155 were run by community entrepreneurs or organisations, while 234 were located in and managed by schools (USAASA 2008a). (In comparison, the educational channel had delivered 604 computer labs in KwaZulu-Natal in three years.) Moreover, USAASA's 2007-08 Annual Report states that many of the telecentres had fundamental problems and did not operate effectively (ibid). A USAASA report from 2005 stated that the telecentres struggled with the following factors:

- 1) the limited human capacity to manage and operate the ICT facilities
- 2) the under-utilization of ICT facilities due to lack of computer training and skills among staff
- 3) high rates of technical failure, especially internet connectivity
- 4) the high cost of ICTs

- 5) that ICT applications were sometimes inappropriate to meet the needs of the communities they serve and
- 6) various social, economic, political and cultural conditions (USASA 2005:4)

Table 10 summarizes my fieldwork observations of the telecentre channel in the three poor communities.

**Table 11:** Output indicators for the telecentre channel

	Telecentres	Sicabazini	Adams Mission	Inanda
1.	Number of operating telecentres that provide basic telecentre services	1	1	1
2.	Number of training courses per week in the telecentres	0	2	15
3.	Number of users per centre per day	3	10-15	50
4.	Services are affordable	No	Yes	Yes
5.	Number of paid staff in the telecentres	0	0	5
6.	Whether the telecentre managers thought the telecentre was successful	No	No	Yes

All the three telecentres visited during fieldwork were operating and offered basic telecentre services such as computer and internet access, photocopying, printing, faxing and typing. The Telecentre Manager in Inanda said:

What we are doing here is that we are selling basic telecommunication services. Typing, printing, photocopying, faxing, laminating, scanning, email and so forth, and we are basically the only centre in the community (Interview 8).

The telecentres varied more with respect to the training courses they offered. The telecentre in Sicabazini had previously offered a training course for the pupils in the surrounding schools. Vuvuzela had installed software on the computers that included a training course. However, to access the computers with the Vuvuzela software the users had to buy vouchers. In the start phase of the centre, Vuvuzela had provided free vouchers in order to enable the telecentre managers to get the business going. However, just before my

fieldwork, they had closed down the free account and begun charging. The pupils could not afford to pay for vouchers and the telecentre managers had to close down the course. Hence, the telecentre in Sicabazini was not providing any type of training course at the time of my fieldwork. The telecentre managers had not been satisfied with the training course software provided by Vuvuzela because it did not target the needs in the community. Firstly, it was in English while the most people in the area only spoke Zulu. Secondly, it solely targeted children and not adults who also needed to learn computers. Thirdly, it was not interactive. Finally it was designed for people who already knew the basics of computer use.

The telecentre in Adams Mission offered the possibility of computer practice for people taking Adult Based Education Training classes and for pupils at the surrounding schools. These were not taught classes, but the telecentre was open for these two groups to come and practice and the telecentre manager or her assistant were there to offer support as best as they could. The telecentre also had an agreement with University of South Africa, which offered remote teaching, so that the university paid for its students to use the internet.

The telecentre in Inanda offered a high number of computer classes tailored to the different needs in the community. The management realized that most people did not know how to use the computers or the internet and that there was a major need for training courses. The centre offered three classes a day that were tailored to the needs of different groups in the community such as old people, young people, small businesses, women, health workers and security personnel. They also had campaigns to recruit new user groups. One example of how new services were developed was a campaign they had that targeted women. The telecentre managers realised that the majority of their users were men and wanted to increase the number of women using the centre. They went to visit different women's groups in the community, mapped their potential ICT needs and asked them why they were not using the centre. Thereafter, they

tailored a course to suit these women. The training courses had become so popular that there was limited space left for community members who just wanted to use the normal telecentre services. As a result the telecentre wanted to expand. The telecentre manager in Inanda explained:

The other thing that we realized when we opened the centre was that many people that are coming here don't know or they cannot do things for themselves. They cannot just go into the computer and type and email so we thought we needed to start some kind of a skills programme that are going to empower them. So we started that program. But it created bit of a problem because we ended up having more people interested in the training programme – so much so that we don't have space for people who are coming in ad hoc to use the computers because the computers are always full of people who want to learn how to use the computer (Interview 8).

In addition to the training courses, the telecentre also had a refurbishment centre, which repaired computers for the telecentre, as well as for the surrounding schools and households at cheap rates. The refurbishment centre also trained unemployed youth in the community to do computer repairs and in doing so providing them with skills to get a job or start their own business.

With respect to usage, the centres also varied a lot. The telecentre in Sicabazini was, according to its managers, only used by around 20 people a week. The most used services in both Sicabazini and Adams Mission were photocopying and printing. Few community members came to use the computers independently and even fewer came to use the internet. Only around five people a week were using the internet and these were tourists. The manager of the Community Development Centre in which the telecentre was located stated:

Unfortunately, not so many people use the centre. Before, it was used a lot because the school kids used to come here. But they don't come anymore because they don't get free vouchers, and it's too expensive for them. (...) What I can say is that the groups who are using the centres are only school kids and community people coming for photocopying. Only tourists use the internet. It is not easy with the internet because they don't know how to use the internet. They don't know how to use a computer. We are in the rural areas (Interview 12).

One of the telecentre managers said:

Around 20 people use the centre a week in total. The community come for copying mostly, the teachers come for printing. The printing is good and

affordable, the copying is not so good because it is slow and too light so people complain. The fax does not print a slip. The internet and the computers are not used by the community because it is not affordable [due to the voucher problem]. The internet is used mainly by tourists from the Mtembe Elephant Park and from people staying in the centre accommodation (Interview 17).

The telecentre in Adams Mission was used by between 10 and 15 people a day, but most of these came to use the phone or photocopying facilities (Interview 6). The telecentre manager in Adams Mission stated:

There are especially four groups who use the centre. Approximately four UNISA long distance students use the centre for internet a week. This is the only group using the internet and they are not necessarily from Adams mission. ABET [Adult Based Education Training] learners come for basic computer training. Pupils from the surrounding schools come for basic computer training on Saturdays, but not for the internet. People from the community come for photocopying, typing CVs, printing and phones. Not for the internet (Interview 6).

As mentioned above, the telecentre in Inanda offered a wide range of training courses suited to the different needs. Therefore the centre was widely used by different groups in the community. The telecentre manager estimated that as many as 50 people used the centre each day. Their training courses had introduced a large number of people to the benefits of ICTs and provided them with the necessary skills to use the computers and the internet effectively. The training courses were indeed so popular that it was hard for the telecentre manager to find space to those not taking the course. The telecentre therefore wanted to expand. That the telecentre in Inanda was more widely used than the other centres may be related to the fact that it was in an urban location with a high population density. However, also Adams Mission had a high population density and was not that much further from Durban. Hence, I would argue that the training courses and the low prices were crucial contributing components behind the high number of users in Inanda.

USAASA paid the internet bill for the telecentre in Adams Mission. The telecentre charged low prices and was not strict in demanding payment because

of the high level of poverty in the area. As a result the telecentre did not make enough money to cover the payment of staff salaries.

The telecentre in Sicabazini did not, at the time of my fieldwork, receive any operational subsidies from USAASA, the Peace Foundation or Vuvuzela. It had been given free vouchers from Vuvuzela to establish the business, but the account had been closed down. From that point onwards the community members had to buy vouchers in order to use the centre. The cost of vouchers was a significant barrier that prevented many community members from using the internet. One of the telecentre managers stated:

It is hard for people to buy the vouchers. The fifty Rand that the students paid for the course is only two hours and that is not enough time to learn properly. What I can say is the vouchers are killing the centre. The reason is that it is Vuvuzela's business. As a result the school kids are not coming here anymore because they cannot afford to buy vouchers each and every time they come to use the computers for training. So the business is still running slowly and we are not making any money (Interview 17).

The other telecentre manager in Sicabazini stated:

We are struggling to provide services in a good way to the community because the rate of poverty and unemployment is too high. People want computer training, but we cannot give it to them because of the prices of vouchers from Vuvuzela (Interview 18).

Moreover, all the money the centre received from customers was used to pay the internet bill. Indeed, the telecentre had to borrow money from the Community Centre in which it was located in order to pay for the internet. This is ironic because the internet was not even used by the community members, but rather by tourists visiting the nearby elephant park.

In Inanda, an NGO called Isibani Solunto paid the telecentre staff, which included the manager, trainers and technician. Neither the telecentre in Sicabazini nor the telecentre in Adams Mission paid their staff. These two centres were supposed to run as a sustainable business and cover their own costs. However, according to all the telecentre managers it was impossible to run the centre as a sustainable business given the high prices on ICT and the



low levels of purchasing power and ICT awareness in their communities. The manager of the community centre in which the telecentre in Sicabazini was located stated:

The peace foundation introduced it as a business and the people who are running it is the telecentre managers. They are running it as a business and they are renting the premises including electricity, but they are not renting now because the business is not running well, but when the business are better they will pay rent (Interview 12).

I don't know – we are not benefiting that well for this business. We have purchased the cartridge that they are using because they are not able to pay for their expenses. They have to pay for connectivity and transport. Especially one of the telecentres managers is living so far away and she has to have the money for transport to come to work everyday and they are not getting any salaries. So I have met them halfway, I bought the cartridge so they are able to go on with the business, but it is not working that well (ibid).

Only the managers in Inanda viewed their telecentre as a success. The telecentre managers in Sicabazini and Adams Mission said that the telecentres were not a success.

The analysis indicates that the telecentre in Inanda has been the most successful. It provided a range of training courses, was widely used by people in the community, had paid staff and was considered a success by the telecentre manager. The two other centres are less successful with Adams Mission being more successful than Sicabazini.

To summarize, the results of the telecentre channel were meagre. At the national level it established only 389 telecentres between its inception in 1997 and 2008. Only two of the three most successful telecentres in the province of KwaZulu-Natal are used by more than 15 people a day and the community only uses the internet in one of the three centres. During my fieldwork I visited two other telecentres in KwaZulu-Natal which were not operating at all.

## 6.2 Market channel

The central intentions of the market channel was to provide fixed line and cellular network and services poor households and to provide internet connections to schools at a discounted E-rate.

### Access in households

The CLIQ survey asked questions about access to ICT in households in the three case communities. Table 11 shows that only 13.2% of the households in the three case communities had a working fixed line phone in their dwelling. The CLIQ survey also found that only 61.5% of the respondents in the communities had used a fixed line payphone within the last three months. This is far from universal service and hardly impressive. However, the CLIQ survey found that as many as 91.4% of the respondents had a cell phone at home, which indicates that the cell phone companies had achieved results that were above and beyond their specified targets. This is impressive and close to universal access. Table 11 shows that only 6.3% of the sample had access to a computer in their dwelling and 6.9% live in a household in which someone had access the internet. It can be seen that access to fixed lines, computers and the internet are lower in the rural Sicabazini than in the urban Inanda and the peri-urban Adams Mission. Access to cell phones does not follow this pattern.

**Table 12:** Households access to ICTs in poor communities

	<b>Sicabazini (rural)</b>	<b>Adams Mission (peri-urban)</b>	<b>Inanda (urban)</b>	<b>Total</b>
% Cell phone	79 of 88 (89.8%)	46 of 47 (97.8%)	34 of 39 (87.2%)	159 of 174 (91.4%)
% Fixed line	3 of 88 (3.4%)	7 of 47 (14.9%)	13 of 39 (33.3%)	23 of 174 (13.2%)
% Computer	2 of 88 (2.2%)	5 of 47 (10.6%)	4 of 38 (10.5%)	11 of 173 (6.3%)
% Internet*	4 of 87 (4.6%)	3 of 47 (6.4%)	5 of 39 (12.8%)	12 of 173 (6.9%)

\* % of people where someone has access the internet through a cell phone or a computer  
Source: CLIQ 2008

A key intention of the policy was to roll out the fixed line network. In the first legislative reform Telkom were given a monopoly and substantial USOs to provide fixed line services to poor household. Telkom made huge investments and fell just 11,448 lines short of the 2.69 million target for new lines to be installed between 1997 and 2002 (Hodge 2003, Makhaya and Roberts 2003). The network was almost fully digitalized by mid-2002, and installation and repair times had decreased dramatically (ibid).

From 2001, however, there were mass disconnections from the fixed line network. In 2001 and 2002, the rate of disconnections exceeded the rate of connections, resulting in a net decrease in the total number of fixed lines. In 2001, 630,000 new lines were rolled out, but there were total disconnections of 1,160,000 lines, which resulted in a net decrease of 530,000 fixed line users. Similarly, in 2002, 570,000 new lines were rolled out, but of these 606,000 lines were disconnected, a decline of 36,000 lines (Hodge 2003:6). The majority of these disconnections were in previously disadvantaged communities among inhabitants who could not afford to pay (Makhaya and Roberts 2003). Hodge (2003:6) estimates the cost of fixed line connections that were later disconnected to be 17 billion Rand (13.7 billion NOK).

The second legislative reform invited companies to tender to become a second national operator in competition with Telkom. However, the licensing process that followed was slow. In fact, the second national operator, NEOTEL, was not licensed until 2005, did not begin operating until the middle of 2006, and was still only operating on a very limited basis in 2007 (Esselaar and Gillwald 2007:16). Hence, it had not yet started to implement its Universal Service Obligations in May 2008. Another central intention had been to provide cellular services to poor households. Hence, the cell phone companies MTN and Vodacom were given obligations to roll out network and services. By 1996 Vodacom and MTN had achieved the license obligations given to them in 1993 already (Hodge 2003; Benjamin 2001a). The obligations on the cell phone companies to roll out networks have been considered a success (Hodge 2003;

Esselaar and Gillwald 2006). Cell C granted a new license in the wake of the Telecommunications Amendment Act (2001). By 2006, Cell C had met its obligations (Esselaar and Gilwald 2006:26).

More recently, the Minister of Communications announced that the state-owned companies Sentech and Infracore would provide broadband networks to poor communities through USOs. However, Sentech applied to the national treasury for 3.1 billion Rands to build a network covering schools, hospitals, clinics and Thusong centres in disadvantaged areas, but was only granted 500 million Rands with no commitment for further funding (Sentech 2008). As a result this network will not be built (ibid). The roll out of Infracore's network had not begun at the time of my fieldwork.

### **Access to internet and E-rate in schools**

Table 12 shows that of the ten schools visited, only two had a computer lab with an internet connection and that none schools received an E-rate. This is hardly impressive.

**Table 13:** Number of schools with internet and an E-rate in the three case communities

	<b>Sicabazini</b>	<b>Adams Mission</b>	<b>Inanda</b>	<b>Total</b>
Number of schools with internet	0	0	2	2
Number of schools with E-rate	0	0	0	0
Total number of schools visited	2	4	4	10

Of the two schools that had an internet connection, both were located in the urban community of Inanda and both received an internet connection from MTN. Only one of these computer labs was still in use. In the other one, the computers with the internet connection had been stolen.

According to the regulator, it was unable to monitor the companies' compliance with their USOs because of the lack of a compliance model, the increasing complexity of the regulatory framework and the compliance section's limited

capacity. One of the Deputy Chief Education Specialists for ICT in the inter-district committee in DoC KwaZulu-Natal stated:

The DoC has connected some schools. ICASA distributed quotas to all the service providers. The mobile companies were to connect 500 schools. Vodacom is the only one that has reported that it has only connected 138 schools. Cell C and MTN have not reported (Interview 33).

None of the schools received an E-rate on their internet services and only one of the teachers I spoke with had heard even about it. PDoE bureaucrats were frustrated with the failure to implement the E-rate. One of the Deputy Chief Education Specialists for ICT in the inter-district committee stated:

The E-rate is not clear and not happening! We are confused. We do not have information and we do not know what is happening. I suspect that the companies do not want to comply. They do not just want to give discounts if they are not subsidised. ICASA visited us about the E-rate, but they said that some things were not clear yet and they never came back to us. We do not have information! What is going on? I think there is some business somewhere stopping it (Interview 33).

To summarize, the performance of the market channel was mixed. It has been relatively unsuccessful with respect to providing fixed line phones to households and internet at an E-rate discount to schools, but it has been very successful in providing cell phones to households.

### 6.3. Education channel

The policy intention of the school channel was to provide computers for administrative purposes and computer labs, and train teachers to make use of them. The provision of internet was left to the private operators. In terms of numbers the educational channel was far more effective than the telecentre channel. In KwaZulu-Natal alone it provided 604 computer labs in the three years before my fieldwork and trained two thousand teachers a year (interview 28). All the 604 computer labs were located in previously disadvantaged communities (ibid). This was in sharp contrast to the telecentre channel, which, with its huge fund, had only managed to provide 389 telecentres and cyber labs

in schools in the whole country in eleven years. In quantitative terms the education channel is clearly more successful.

Table 13 summarizes the results of the education channel in the three communities. It shows that both Inanda and Adams Mission have schools with a computer lab in use, while Sicabazini does not.

**Table 14:** Output indicators for the education channel

<b>Performance indicators</b>	<b>Sicabazini</b>	<b>Adams Mission</b>	<b>Inanda</b>	<b>Total</b>
Number of schools with a computer for administrative purposes	1	4	4	9
Number of schools with computer lab	1	4	2	7
Number of schools with computer lab connected to internet	0	1	1	2
Number of schools with trained teachers	0	4	2	6
Total number of schools visited	2	4	5	10

Of the ten schools visited during fieldwork, all but one had at least one computer for administrative purposes. The school without any computers was located in the remote area of Sicabazini and lacked both electricity and a fixed line telephone so the teachers had to rely on their private cell phones for phone calls.

Seven of the ten schools had a computer lab with between eight and thirty working computers. Six of the computer labs were in use and these were all located in the urban community of Inanda or the peri-urban community Adams Mission – four in Adams Mission and two in Inanda. The computer lab in Sicabazini had just recently been established and the school had not yet started to use it.

The schools were better able to put the computer labs into use than the telecentres. The schools all had a budget and the teachers were paid and trained to teach with ICT. In high schools, the computers were mainly used

to teach Computer Application Technology (CAT), while in primary schools they were used for normal classes. A central challenge for the teachers was that there were often far fewer working computers than pupils. For example, in Ochlang High School, where many of the computers had been stolen, there were only eight computers for a class of thirty pupils. The teachers found it very challenging to teach a practical subject like CAT with such a high pupil to computer ratio (Interview 21).

Six of the schools with computer labs had at least one teacher who had received a one-week training course from the PDoE where they learnt to use and teach ICT.

To summarize, the school channel had established 604 computer labs in schools in three years. In comparison USAASA had only established 389 telecentres in 12 years. Moreover, on the ground nine out of ten schools had a computer for administrative purposes and seven of the ten schools had a computer lab. All the schools with a computer lab had at least one trained teacher. Also, the schools seemed more capable than the telecentres in operating the computer labs as they had a budget and the teachers were paid. This indicates that the education channel have been relatively successful.

## 6.4 Usage of ICT in case communities

Table 14 summarizes the number of working telecentres, computer labs in schools and computer labs in schools with an internet connection. It shows that all the communities had access to a telecentre and had at least one computer lab in a school. Only Inanda had two schools with a computer lab connected to the internet by MTN and of these only one was actually working.

**Table 15:** Outputs on the ground in three communities

Name of community	Number of working telecentres	Number of computer labs in schools	Number of computer labs in schools with an internet connection
Sicabazini	1	1	0
Adams Mission	1	3	0
Inanda	1	2	2
Total	3	5	2

However, even though all of the communities had a telecentre and at least one school with a computer lab, table 15 shows that the CLIQ survey found that 67% of the respondents in the three communities had never used a computer before and 77% had not used a computer within the last 6 months.

Unsurprisingly, given the outputs of the policy, an even higher percentage, 85% had never used the internet before. This is hardly impressive given the major focus on access to ICT among the poor in the legislative framework.

**Table 16:** Computer and internet use among CLIQ respondents

	Sicabazini (N= 88)	Inanda (N=39)	Adams Mission (N= 47)	Total (N=174)
Have never used computer before	82.8% (72 of 87)	46. 2% (18 of 39)	55.3 % (26 of 47)	67% (116 of 173)
Have not used a computer within the last 6 months	91.8% (67 of 73)	48.7% (19 of 39)	79% (34 of 43)	77% (120 of 155)
Have never used internet before	89.2% (74 of 83)	65.7% (23 of 35)	91.5% (43 of 47)	85% (140 of 165)

\*those who did not answer are excluded

Source: CLIQ 2008

Table 15 also shows that a higher proportion of the respondents in urban Inanda had used computers and the internet compared to the peri-urban Adams Mission and rural Sicabazini. This stems most likely from the fact that Inanda was the only community in the sample with a successful telecentre that provided a wide range of training courses for different groups in the community, and it was also the only community in the sample with a school computer lab connected to the internet. On the other hand the high proportion of people in Sicabazini and Adams Mission who had not accessed the internet makes sense because the schools were not connected to the internet and



according to the telecentre managers the community members did not use the internet connection in the telecentres. Furthermore, it seems that Adams Mission had a higher number of computer users than Sicabazini because the former had three schools with a computer lab and provided two computer training courses a week for the community, while the latter only had one school with a computer lab, which was not operating yet, and a telecentre that charged high prices and did not provide any training courses.

## 7. Towards an Explanation

This section will answer sub-question IV: *what explains the results?* It will start with a summary of the results of the three channels and thereafter consider the empirical findings that might explain these results.

The results on the ground indicated that the market channel had performed well with respect to providing access to cell phones in poor households, but not so well with respect to providing fixed line phones in households and connecting schools to the internet at an E-rate discount. It was, therefore, a partial failure.

The telecentre channel established only 389 telecentres in the whole of South Africa in eleven years, many of which are not functioning properly. This was evident in the three case communities, where two of the three most successful centres in KwaZulu-Natal were facing fundamental problems. This indicates that the telecentre channel had not been very successful.

The school channel seemed to have performed better than the other two. In KwaZulu-Natal alone it had established 604 school computer labs in three years and had trained two thousand teachers in one year. All the schools that I visited had at least one computer for administrative purposes and seven out of ten schools had a computer lab and trained teachers. Generally speaking, the school computer labs were also better managed than the telecentres.

It is apparent that, based on the data presented in this thesis, the ICT to the poor policy has only been partly successful. What is more, the school channel had been more successful than the market and the telecentre channel. Below, I seek to explain using empirical data, how these variations in outputs across the three channels can be explained. This analysis will focus on the different tools and structures chosen to frame their respective implementation processes.

There were major differences in the tools and structures utilised by the education channel, on the one hand, and the telecentre and the market channels

on the other. The education channel had clear goals, relied on direct delivery tools, and had a decentralized, tightly integrated and hierarchical implementation structure. The market and telecentre channels, however, had unclear goals, a centralized and a loosely integrated structure that relied on third parties at the local level. This made implementation difficult and effectiveness rested on the will and capacity of the third parties that were involved.

## 7.1 Telecentre channel

The original intention of the telecentre channel was that USAASA, as a central financial agency, would pay USAF subsidies to third parties – either consumers or companies – to ensure affordable household access to voice telephony in poor communities. Hence, the structure established was centralised, loosely integrated and relied on third parties for successful implementation. In 2001, the amendment of the act included a focus on delivering more advanced ICTs, but without changing the structure of the channel. Its focus remained on delivering access in terms of infrastructure and technology.

In practice, USAASA deviated from these original intentions. The approach chosen by USAASA, has since its inception in 1997, been to deliver telecentres that offered more advanced ICT, such as computers, to poor communities.<sup>13</sup> The basic idea was that USAASA would pay for and deliver ICT equipment to establish a telecentre. This would be given to a community organisation, which would run the telecentre as a sustainable business. USAASA would pay for the internet for one year, but after that responsibility for operation rested entirely with the third party organisation.

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<sup>13</sup> As seen in chapter 5.1, the establishment of telecentres was not included in the USAF fund until in the Telecommunication Amendment Act of 2001.

My fieldwork indicated that, at least initially, USAASA had been mainly concerned with providing access to infrastructure and technology. The provincial representative of USAASA stated:

We have been mostly concerned in providing access points. That was our main drive, but later on we felt ok, if there is a locally based organization it might be providing other services to the community and then they can add the telecentre as an add on. For example, there may be a women's organisation involved in farming, but over and above that they may run the telecentre business. So that was the idea (Interview 10).

The head of the policy section within the Department of Communications (DoC) reiterated this point:

USAASA has been responsible for providing access. But in the past they have focused on access in a physical sense. And, as you perhaps know, without real success stories because it was about technology dumping. As long as they put up a 100 telecentres or put computers in 50 community centres then they had done the job. Whether the computers were used or not has not been the focus and that is a problem (Interview 41).

Hence, USAASA did not pay sufficient attention to the organisations that were to run the telecentres. Even the Head of the USAF underlined this point:

I personally believe that the telecentre is a good model. However, one of the areas we are criticizing ourselves for is that we focused on physically rolling out telecentres, whereas little attention was given to the organization running the centre and on paying subsidies for it to run it (Interview 43).

Two inter-related problems stemmed from USAASA's myopic focus on 'technology dumping'. First, that the community organisations often did not have the capacity to run the telecentres. Second, in most situations the telecentres could be run as sustainable businesses – that is, the income generated did not cover the costs.

USAASA did not subsidise the operational costs of the telecentres, beyond paying for the first year of internet. It did not pay salaries. As a result many telecentres were managed by incapacitated and unpaid volunteers from the local community, who were often hired on an ad hoc basis and that would quit if they got a paid job somewhere else (interview 4, 17 and 18). The USAASA provincial representative stated:

The number one challenge for the telecentres is the telecentre management and ownership. Because we do not pay for salaries many centres are run by volunteers. But you cannot have volunteers forever and the type of people you are attracting if you are not paying also says something (Interview 10).

The Head of the USAF reiterated this point:

Many centres are run by a community based organisations and in those circumstances you get challenges because they lack capacity and sometimes it disintegrates and its only one person left so it is no continuity (Interview 43).

USAASA's provincial representative pointed to the telecentre in Inanda as the exception, but these are aberrations that are due to the exceptional abilities of the particular individual or organization Isibani Solunto that paid salaries to the staff:

There are some centres, take Inanda for example, that are successful because the telecentre manager is competent. But she is also paid a salary and that is why she is staying there. If she wasn't paid she would go elsewhere and the next person who would go in there would not be at the same level and as a result the centre will go down. I have seen telecentres flourishing, doing so well, and then you remove the person who is running it and it goes down. So that is a major challenge (Interview 10).

The findings in this thesis suggest that in many situations it was difficult or impossible to run the telecentre as a sustainable business. None of the telecentres I visited were run as a business and all the telecentre managers believed this would not be possible because of the high level of poverty, low level of ICT awareness and relatively high price of ICT services. One of the telecentre managers in Sicabazini stated that: 'USAASA wants us to provide services to the community, but at the same time wants us to work as a business and pay our own salaries. How can we do that?' (Interview 17).

Even officials in USAASA admitted their model was problematic. USAASA's provincial representative stated:

We want the telecentres to run as a business, but at the same time we cannot allow a situation where the telecentres become too costly... Because the affordability is another issue, there has to be a balance between the profits and what the community is paying. The

community should pay reasonable prices, but on the other hand, the decision we took means that in the main these centres will be located in poor communities. If a person has ten Rands in his hand he thinks, must I buy food with this ten or should I communicate with my brother? (Interview 10).

Bureaucrats in other government departments that I interviewed deemed USAASA's approach unsustainable. The Manager of the Department of Economic Development in KwaZulu-Natal stated:

We knew that the telecentre model implemented by USAASA had already failed. Telecentres were placed in poor rural communities where computers, photocopying and printing services were sold. The business model was not working because the prices you could actually charge in rural communities did not generate enough money to make it sustainable (Interview 24).

Problems resulting from the lack of capacity among the local implementation agents and the failure of USAASA to subsidise the operating costs of telecentres were visible in the two unsuccessful telecentres visited during fieldwork. The telecentre in peri-urban Adams Mission had severe capacity problems. It had originally been given to a community-based organisation but this had disintegrated. During my fieldwork the telecentre was under the stewardship of a man from the community calling himself the 'telecentre administrator'. He took care of all the decisions concerning the telecentre and its finances. On a day-to-day basis the telecentre was run by telecentre administrator's tenant and grandson. They were working as volunteers because the centre did not make enough money to pay for their salaries. All three – the administrator, his tenant and grandson – lacked the technical, managerial and operational capacities to effectively run the centre.

The telecentre in rural Sicabazini was the most recently established in the sample. The manner in which it was set up indicates that USAASA had started to rethink their approach. Instead of being granted to a community organisation, it had been granted to a Johannesburg-based NGO called the PEACE foundation and it received technical support from a private company located in Durban called Vuvuzela Communication. Nevertheless, the telecentre was run on a day-to-day basis by two telecentre managers recruited from the local community. They worked as volunteers because the telecentre

did not make enough money to pay them salaries. The managers had limited technical and managerial skills. Vuvuzela was supposed to provide technical support, but it was in conflict with the telecentre managers over the product they provided. The core reason for this conflict was that the community members had to pay for vouchers in order to use the computers. According to the telecentre managers the vouchers were too expensive given the high level of poverty in the community. The PEACE foundation did not provide operational funding to the telecentre.

Notwithstanding these criticisms, the telecentre in Inanda stood out as an example of how the telecentre channel could work if it was implemented by a competent third party. It was run by a local NGO called Isibani Solunto that were subsidising services and paying the management. The manager of Isibani Solunto was also the manager of the telecentre. She was born and raised in Inanda, but had many years of experience from NGO and development work. The centre had recruited and trained 'ICT trainers' from the community. These trainers were paid a salary and held courses in the telecentre. Isibani Solunto had also recruited and trained a technician to run a computer refurbishment centre, which provided technical support to the telecentre as well as to surrounding schools and households.

This suggests the telecentre approach might have been much more successful if USAASA had provided more ongoing support to the telecentres beyond the point of delivery, such as paying salaries, subsidizing prices and providing capacity-building. Moreover, they could have been more active in building partnerships with local and provincial government institutions.

A central reason why USAASA did not provide support or build good partnerships around the centres was that it had a very top-heavy implementation structure and lacked the provincial structures to do this. As mentioned above, it only had one representative per province. In KwaZulu-Natal, the provincial representative had the sole responsibility for coordinating, monitoring, evaluating and problem-solving in all of USAASA's 23 telecentres

and 40 school computer labs spread throughout the province. As a result of these factors he admitted that he was largely unable to fulfil his role:

I am the only person in the province so I am representing the organisation and doing everything USAASA does in the province. USAASA is supposed to coordinate, monitor, report and make recommendations. But there are no proper structures at the local level. You cannot expect one man to do all that (Interview 40).

In addition, he had other tasks such as identifying underserved areas, establishing partnerships, cooperating with other actors, holding campaigns and making recommendations to the national level. As if these problems were not enough, the provincial representative had neither an operating budget, an office, ICT knowledge or a technical team.

My informants made it clear that the telecentre channel had been unsuccessful and that USAASA had a poor reputation in the sector (Interviews 6, 8, 12, 17, 18, 19, 22, 21, 24, 25, 28, 38, 41, 42 and 45). This was especially frustrating since USAASA, by law, was solely responsible for spending contributions from the USAF. Between 1999 and 2008 the operators contributed a total amount of 636 million Rands (496 million NOK) to the USAF (USAASA 2008a; USAASA 2008b). However, the national treasury had only allocated 227 million Rands to USAASA, which constitutes only approximately 35.7% of the total amount collected. A central reason was that the national Department and the treasury was unsatisfied with the poor performance of USAASA and its inability to use the funds effectively (interview 41, 42, 43 and 44). USAASA, however, claimed that they were not prioritized by the DoC and therefore had too little capacity to manage the fund in a more effective way (interview 10, 43 and 44). They argued that they needed an increased operational budget in order to have the incentives necessary to attract the appropriate people to effectively manage the USAF. According to USAASA and the head of the PNC on ISAD, they had less attractive incentives than ICASA and the DoC (Interviews 42, 43 and 44). Nevertheless, the consequence was that almost 409 million Rands (328



million NOK) specifically targeted at improving ICT access in poor areas remains unspent in the national treasury (ibid). The money was, however, not available to any agency other than USAASA. Some of my informants saw this as frustrating and the DoC, PNC on ISAD and DoE had together attempted to get access to the fund, but they had not yet managed to (Interview 41 and 42).

In summary, the failure of the telecentre channel was due to three interrelated problems. Firstly, USAASA did not sufficiently consider whether the organisations that were given the telecentre were able to run them. In many cases they relied on unsuitable volunteers. Second, USAASA did not sufficiently attempt to build capacity within the telecentres. Third, USAASA did not pay sufficient attention to whether it would actually be possible for the telecentres to be run as sustainable businesses. All of these deficiencies were evident in the telecentres where I undertook fieldwork. The two unsuccessful centres were run by local volunteers who lacked the capacity, funds and support to run the centres, while the only successful telecentre in the sample was the one that had a capacitated, paid manager and received funding from an NGO to pay salaries and subsidize prices.

These three factors can be related to the mandate of the USAF and the structure of the channel. Firstly, USAASA was established as a central financial agency that was supposed to pay subsidies and hence it only had one provincial representative per province. The structure of the organisation was largely unable to sustain the telecentres on the ground given the reliance of incapacitated third parties. Secondly, the mandate of the USAF focussed on providing technology and not on the softer sides of technology transfers in terms of skills, capacity and operational funding, which were of the utmost importance to the telecentre channel's long term success.

## 7.2 Market channel

The intention of the market channel was to extend the fixed line and cell phone networks and provide voice telephony in households and pay phones, and internet connection with an E-rate discount in schools. The channel depended on the private companies and had a market structure. The key tool of service delivery to poor households and schools were the USOs of ICT companies.

Salamon (2001) warned about the use of indirect tools that rely on private operators in the market when the overall goal is equity or redistribution. Nevertheless, in the market channel of South Africa's ICT to the poor policy the key actors were the increasingly privatized company Telkom and the fully private cell phone companies. The fundamental objective of these operators was the maximisation of profits for the benefit of their shareholders. This is not easily reconciled with the objectives of the ICT to the poor policy.

The successful implementation of the USOs would have been possible in two situations. Firstly, where there is the valid threat of sanctions for non-compliance. This requires a regulator with sufficient capacity to effectively monitor the compliance of the companies with their USOs and sanction them if they do not comply. Secondly, where the implementation of the USOs was profitable to the companies and hence it was in their self-interest as private companies to fulfil them. In such a situation the USOs would become irrelevant and monitoring by the regulator would be unnecessary.

The empirical data on which this thesis is based found that the key weakness in the market channel was the regulator, ICASA. It demonstrated a limited capacity to administer the increasingly complex regulatory framework, interact with the major companies and ensure compliance. Several of my informants at the national level confirmed this point (Interviews 41, 44 and 45). A quote by the Head of Policy Making within the DoC illustrates this general point:

The main problem is that, sometimes when ICASA wants to do something progressively such as lowering the costs, you have these companies with all these resources taking ICASA to court. They spend years in court. And ICASA doesn't have the best lawyers because it is not enough money there. ICASA doesn't have the resources to engage with the big companies (Interview 41).

According to my informants the DoC had prioritized capacitating the regulator ICASA over USAASA (interview 41, 42, 43, 44). Nevertheless, while the capacity of the regulator had increased, major problems remained in crucial areas. The head of the PNC on ISAD stated:

The DoC is struggling to capacitate the regulator and ICASA is still not there. We have managed to get there in terms of salaries. Until two years ago a councillor were paid at a chief director level. From last year he was paid at the Director General level and the budget was increased. We fought for that. To try and get the budget to capacitate ICASA to attract talents etc. Now, we are not yet there. ICASA still has some constraints in personnel and units (Interview 42).

A unit within the regulator, which was very important for the pro-poor part of the ICT policy, was the compliance section for telecommunications. This unit was responsible for monitoring the compliance of the companies with USOs but it had severe capacity constraints. According to the Head of the Compliance Section:

Capacity problems at ICASA include under-staffing in some critical divisions. (...) The unit meant to monitor telecommunications compliance currently has one officer and a manager responsible for monitoring compliance with over 500 licensees (Interview 45).

This point was reiterated by the DoC:

It is public knowledge that ICASA is not equipped with the necessary skills and resources to effectively monitor the companies. As you might know, it's difficult to make the private sector work together because it is about turf and competition. (...) I am very concerned – we are losing time and we are falling behind (interview 41).

As a result of this the regulator did not have the capacity to monitor the extent to which the companies complied with their USOs. The Head of the Compliance section stated:

The short answer is that we are unable to assess the extent to which there has

been compliance with the obligations due to an incomplete regulatory framework and lack of capacity in key units (Interview 45).

The inability of the regulator to effectively monitor the USOs can be seen as a contributing factor to the mixed results of the market channel in the three poor communities.

During the process of managed liberalisation, the regulatory framework had become increasingly complex and different companies had been given different types of USOs. Telkom and later NEOTEL were supposed to provide fixed line access and an E-rate discount on internet services. The cell phone companies were given obligations to extend the cell phone networks and various types of operators had been granted USOs to connect schools to the internet. The companies seemed to have complied in varying degrees. The increasingly complex regulatory framework combined with the limited capacity of the regulator vis-a-vis the companies had according to my informants contributed to the various levels of compliance (Interviews 41 and 45).

The regulator had given Telkom a clear set of license obligations as a part of its license in 1997. These were supposed to be implemented before 2001 or else the company would be fined (Benjamin 2001; Hodge 2003). As a result Telkom had largely fulfilled its obligations by 2001. After the targets were fulfilled the government planned to introduce a second network operator to compete with Telkom and lower the prices. This process was, however, much slower than planned. The second national operator, NEOTEL, was not licensed until 2005, did not start operating until the middle of 2006 and was still operating on a very limited basis when I was conducting my fieldwork in 2008. As a result, the second national operator had not yet started to implement its USOs and Telkom retained its monopoly, continued to charge high prices and generated high profits for its shareholders. The Head of Corporate Affairs in USAASA, who had previously worked for Telkom as a lobbyist, explained:

Telkom has, because of the fact that it had a monopoly stranglehold on bandwidth allocation and selling capacity, Telkom basically kept the prices high. There were certain products that were sold at a mark-up of 7-800% so

the profits were absolutely enormous and that was because the Americans were trying to protect their investment. They made a fortune when they sold their Telkom shares. That Telkom-government deal had an astronomical impact on affordability and accessibility and I'm sorry to say, but the last thing anyone's mind was worrying about impoverished communities and really extending service (Interview 44).

The high prices charged by Telkom meant that poor people were unable to pay their bills. This explains the high number of lines that were disconnected in disadvantaged areas (Hodge 2003; Makhaya and Roberts 2003). This might have contributed to the low level of access to working fixed lines in the three disadvantaged communities investigated during fieldwork.

The Head of the PNC on ISAD explained that many of the problems with Telkom could have been avoided if the regulator was stronger:

Telkom was given an exclusivity of five years, and during the five years they were supposed to roll out to the historically disadvantaged and under-serviced areas. But do not forget that there are certain things that the investors look for in terms of how are we going to recuperate in terms of investment? So as a government in a developing country you have to balance this. Are you pressurized by investors to make certain decisions? Look, in the end they have the money and can turn around and not invest and they have done that in a number of countries. But we believe that there was some wisdom in granting Telkom exclusivity for five years, even though in the process we created a monster that was difficult to control. Even though Telkom rolled out and met the target that was set up in terms of fixed lines, the cost was high and many were disconnected because they could not afford to pay. This could have been avoided if we had a stronger regulator that was able to monitor Telkom (Interview 42).

The weak capacity of the regulator also impacted upon the effectiveness of the USOs to provide internet access to schools. The regulatory framework had become increasingly complex in the post-apartheid era as the process of managed liberalisation unfolded. The various types of regulations did not have a compliance model, which made it increasingly difficult for the regulator to monitor the USOs. The lack of capacity and the complexity of the regulatory framework meant the regulator was unable to monitor the more recent USOs, including those to provide computer labs in schools. In fact, the regulator did not know to what extent the companies had fulfilled their obligations or not (Interview 46).

The regulator also had difficulties in implementing the E-rate. According to the Head of the Compliance within ICASA, the reason why the E-rate had not been implemented was that it had taken a long time to finalize the regulations and now that they were finalized there were disagreements over the interpretations of the regulations. He stated:

The E-rate was not implementable because the requisite regulations had not been finalized. Now that they have been finalized, a new challenge that has emerged is centred on interpretation of the regulations. In a nutshell, the question is whether the discount can be offered to intermediaries or only offered directly to the schools? If it can be offered to the intermediaries, can it also be offered to licensees whose business model relies purely on acquiring spare capacity from other licensees? Lastly, on what elements is the discount applicable? Is it limited to the cost of data on the network or does it also include the cost of the equipment that is required in establishing and maintaining the connectivity for the schools? We do not yet have answers to all these questions (Interview 45).

At first glance the cell phone companies appear to have been the exceptional success of the market channel. The companies provided more networks than they were obliged to by the USOs. Indeed, 91.4% of the respondents in the three case communities had a cell phone in the dwelling. It seems likely, however, that the expansion of cell phone networks happened because the companies made money from it, rather than because they were obliged to do so (see Esselaar and Gillwald 2007). What is more, these results were probably related to the nature of cell phone technology and the fact that it does not require massive investments in infrastructure as is the case with other ICTs such as fixed lines and internet. The improvement in cell phone connectivity is, therefore, would have occurred irrespective of the USOs or the role of the regulator in enforcing them. The fact that it was profitable to the companies to provide cell phone networks to poor communities can explain why access levels in the three disadvantaged communities were high.

As mentioned at the beginning of this section, the USOs would only be successful if the sector had a strong and capacitated regulator or if it was profitable for the companies to fulfil them. The discussion above indicates that

the partial failure of the market channel to provide fixed line telephones to households and internet to schools in poor areas was due to the weakness of the regulator relative to profit-motivated private ICT companies. This problem was exacerbated by the complexity of the implementation channel. The only situation in which the USOs had the desired effect was where it was profitable for the cell phone companies to fulfil their obligations.

### 7.3 Education channel

The intention of the education channel was to provide computers for administrative purposes and computer labs, as well as to train teachers to use them. My fieldwork in the three poor communities indicated that the education channel was quite successful in comparison to the market and telecentre channels. Despite complaints about slow delivery and limited budgets, the education channel had steadily provided computers, trained teachers, and monitored and supported the schools since its inception.

The structure of the education channel was decentralized and hierarchical with clearly defined roles and relationships. The bureaucrats took orders from their superiors, executed these, monitored and then reported upwards. Hence, the manager on top knew the exact results of the channel, could control implementation through orders, and adjust budgets and priorities accordingly. Although, reporting often had to go through many people, it seemed, therefore, that implementation was easier to control and less complicated to execute than in the market-network structures of the market and the network structure of the telecentre channels. The schools were also assessed in terms of their e-readiness before they were provided with computer labs. This meant that the schools that were delivered computer labs had proper security measures, electricity and trained teachers (interview 27, 30, 33 and 37). This ensured that the school was able to put the equipment it received into use. However, it also excluded a number of poor schools that were not e-ready because they lacked

electricity or security measures. The responsibility for providing the basic infrastructure rested with another unit within the DoE. The schools were also in a better state than the telecentres to operate the computers because the schools had paid teachers and a school budget, although often limited, to cover ongoing costs.

Moreover, in the education channel the education bureaucrats also coordinated the action of external actors. In contrast to the market and telecentre channels that utilised central, weak stand-alone institutions with limited local structures, the education channel had a decentralized, integrated and seemingly more capacitated structure. The educational channel did from time-to-time organise external projects, which meant that private companies or other state institutions provided computer labs. This was often done as publicity stunts to improve the profile of companies. However, as long as these external projects went through the education channel, the education bureaucracy ensured that they took place in schools with sufficient electricity and security measures and were followed up by training teachers and monitoring of the computer labs.



## 8. Conclusion

The overall research question posed in this thesis was: *to what extent and why has South Africa's post-apartheid ICT to the poor policy been successful?* To answer this question, the thesis has analyzed the intentions, tools and structures of the policy, the implementation process they framed and the results on the ground in three poor communities. Based on this, some suggestions haven been made about why the results varied across the different channels varied.

South Africa, like many other developing countries at the time, embarked on a policy of gradual liberalisation of the telecommunications sector in the immediate post-apartheid era. However, it was recognized that certain areas and people in the country were unprofitable to the private operators and were unlikely to be provided for if the market was left to its own devices. Therefore, a key intention of the post-apartheid telecommunication policy was to intervene in order to improve access among the poor.

To achieve this, specific pro-poor tools and a pro-poor fund were adopted. Between 1999 and 2008 the ICT operators contributed a total amount of 636 million Rands (496 million NOK) to the USAF (USAASA 2008a; USAASA 2008b). However, the national treasury had only allocated 227 million Rands to USAASA, approximately 35.7% of the total amount because of its inability to use the funds effectively (ibid). This means that almost 409 million Rands (328 million NOK) specifically targeted at improving ICT access in poor areas remains unspent in the national treasury. This thesis indicates that despite both political will and funding being in place, the ICT to the poor policy has been only partly successful.

## 8.1 To what extent have the ICT to the poor policy been successful?

This thesis directed its attention to the tools and structures chosen for the implementation of the policy and argued that these can help explain the mixed results of the ICT to the poor policy. Three channels had been adopted to provide ICT to poor communities: (i) the telecentre channel, which aimed at establishing telecentres in poor communities; (ii) the market channel, which aimed at providing access to voice telephony (fixed line and cellphones) in households and internet at an E-rate discount to schools; and (iii) the education channel, which aimed at providing schools with computers and training teachers.

These channels utilised different tools and structures, which resulted in different results.

Firstly, the findings indicate that the telecentre channel had been largely unsuccessful. It had only established 389 telecentres in poor communities, in the whole of South Africa, in eleven years despite access to a huge fund. Moreover, three USAASA employees that I interviewed during fieldwork admitted that many of the telecentres given to community organisations had problems (Interview 10, 44 and 45). This was also confirmed by other informants on the national, provincial and local level (Interviews 6,8,12,17,18,19,22,21,24,25,28,38,41,42 and 45). Indeed, my fieldwork indicated that only one of the three of what USAASA considers the most successful telecentres in KwaZuluNatal was successful according to my criteria.

The empirical data gathered when writing this thesis indicates that a central reason why the telecentre channel largely failed was that it relied on third parties for implementation at the local level and these often lacked the capacity to run the centres effectively. The third parties were also expected to run the

centre as a sustainable business and cover their own costs, but this was difficult given the high level of poverty in the communities, the low level of ICT awareness and the high prices. It might have been possible, however, to run the centres successfully if USAASA had subsidized staff salaries and prices, as well as provided capacity building and technical support to the centre. This would have entailed a very different structure at the local level. At present, USAASA only had one representative per province. The KwaZuluNatal representative that I encountered during my fieldwork was largely unable to provide adequate support to the telecentres.

Secondly, the market channel had been largely successful in providing cell phones to households in the case communities. This seems to have been because it was profitable for the companies, rather than the design of the tools and structures. The market channel was less successful at providing sustained access to fixed line phones to households and internet at an E-rate to schools. These findings were confirmed by informants within and outside ICASA (Interviews 33, 38, 41, 42, 43, 44 and 45). The findings in this thesis indicate that a central reasons contributing to this result was the complex regulatory framework and the inability of the regulator to monitor the operators and ensure their compliance (Interviews 41, 42 and 45). In this situation the companies only complied when it was profitable for them to do so, because they were not afraid of sanctions from the regulator.

Finally, the findings in this thesis indicate that the education channel had been relatively successful. It had provided 604 computer labs in schools in only three years in poor communities in KwaZulu-Natal (Interview 27). This is impressive compared to the performance of the telecentre channel in the past eleven years. In the three communities the schools had a more sustainable and capacitated structure than the telecentres. The teachers were paid a salary each month and the school would not just dissolve if one teacher found another job. This was

not the case with managers in the telecentres. This may have contributed to the fact that nine out of ten schools visited had a computer for administrative purposes, seven out of ten schools a computer lab that were used for teaching and learning, and two thousand teachers were trained annually. The most challenging aspect of the education channel seemed to be inadequate budgets and the slowness of the bureaucratic process (interview 27, 33 and 39). Another bottleneck seemed to be the limited capacity of the State Information and Technology Agency, which was supposed to procure the computers. An additional challenge was to ensure that the schools prioritized the maintenance of computers and the payment of the internet bills in the already tight school budgets.

## 8.2 What can explain the results?

As shown above, both political will and funding had been in place for the implementation of the ICT to the poor policy. However, it had still only been partly successful in the three poor communities. The telecentre and the market channels were less successful than the education channel. This thesis has argued that an important reason why the policy partly failed was the choice of tools and structures for implementation.

The telecentre and the market channel both had centralized structures and relied on third parties, such as community organisations or private companies, for implementation at the local level. The implementation structures were thus complex and it was difficult to control the third parties. The community organisations seemed to lack the capacity to run the telecentres and the private companies seemed to lack the will to comply with the USOs.

This implementability problem was exacerbated by the lack of capacity in the implementing state institutions. In the case of the market channel, the regulator was the weak link as it was largely unable to monitor compliance with the USOs. In the telecentre channel, USAASA's provincial representative was the

weak link. USAASA only had one representative who was responsible for all the telecentres in the province. Due to the unrealistic scope of his job the KwaZulu-Natal representative was largely unable to provide support to the telecentres or to organize partnerships with other government departments at the provincial and local level in order to ameliorate the problems the telecentres had.

The education channel, on the other hand, had a decentralized and tightly integrated structure. It did not rely on third parties with a lack of capacity or will for successful implementation, but rather on direct delivery through the educational bureaucracy to schools. Hence, all the actors in the chain worked towards the same purpose. Moreover, the schools were better equipped to run the computer lab as the teachers were paid and there was a budget to cover operating costs. It had, therefore, been relatively successful compared to the telecentre and market channels.

This thesis, therefore, supports the very general argument postulated by Salamon (2001) that direct tools, which rely on hierarchic bureaucracies, tend to be easier to implement and more effective and than indirect tools relying on third parties in more complex market and network structures. The findings in this thesis further indicate that the use of indirect tools may be especially problematic in the context of South Africa, where state institutions are weak and often lack the capacity to manage indirect tools that rely on complex implementation structures such as markets and networks.

### 8.3 Concluding remarks and policy recommendations

It can be concluded that the ICT to the poor policy and its three implementation channels partly failed to improve access in the three poor communities.

However, the findings on the ground are largely restricted to the three poor communities in the province of KwaZulu-Natal and can thus not automatically be transferred to other poor communities, provinces or countries in sub-Saharan

Africa that use similar tools and structures. However, the communities were picked out because they were representative of poor communities in KwaZulu-Natal and it is likely that similar results would be found in other poor communities in KwaZulu-Natal and maybe even in South Africa. It would indeed be an interesting for a larger follow-up study to see whether the findings hold for a greater sample of communities and provinces in South Africa. Since the telecommunication sector reform implemented in South Africa is part of a greater neoliberal telecommunications reform trend in developing countries (Noll 2000: 183), it is likely that the pro-poor tools and structures implemented in the South African telecommunications sector have also been chosen and implemented in other developing countries. It would therefore be very interesting to undertake a comparative study where one compares the findings of this thesis with another developing country that has adopted the same tools and structures to see if similar conclusions are reached.

A central aim of the policy analysis is to provide practical advice for policy improvements. With respect to the ICT to the poor policy in South Africa, certain policy improvements can be suggested in the light of my study:

The way the telecentre channel worked at the time of the fieldwork can be understood as a bottleneck in the ICT to the poor policy. USAASA was the only agency with access to the USAF but, because of its weak local implementation structures, it where largely unable to use the fund. Hence, changing the way the telecentre channel operates or the mandate of USAASA seems crucial for the future success of the policy. One can imagine two possible future scenarios.

The first is a scenario in which USAASA receives an increased operational budget and significantly capacitates its organisational structure at the local level in terms of more people, budgets and decision-making power. This local level should have the responsibility for the telecentres, including both building the capacity of staff and providing operational subsidies.

The second, and perhaps a more realistic alternative given the fiscal constraints of the GEAR to reduce state budgets, would be that USAASA withdraws to its role as a financial agency that pays subsidies. However, instead of channelling the fund through its own weak local structures, it could instead channel funds through existing government departments at the provincial and municipal level. In many cases these bodies have significant local structures and impressive ICT plans, but they lack the funds to execute them. During fieldwork, I discovered several such initiatives within existing structures at the municipal and provincial level that could not be put into place due to the absence of resources.

The first was of course the education channel, which could have extended their provision to schools if they had access to the USAF. The education channel was relatively successful, but its constraints were that it was slow and had insufficient budgets. Hence, USAF funding could have expanded the delivery through this channel. Another and related project that USAASA could have supported was a potential cooperation between the PDoE and Ethekeweni municipality to connect schools to the internet. It had been in contact with the SMART project in Ethekeweni Municipality, which has provided broadband in the city of Durban in preparation for the forthcoming football World Cup.

Some of the access points were in previously disadvantaged areas. Bureaucrats in the PDoE wanted to become a part of this project and ensure that the schools surrounding the access point were connected, but sufficient funding was not available to make this happen. Hence, USAASA could have been made available to this project to enable the municipality to provide internet to the schools in poor areas. Secondly, another provincial department called the Provincial Department of Economic Development had developed a digital hub strategy, but lacked the funds to implement it. Thirdly, the Provincial Department of Arts and Culture had started to provide computer labs to their libraries in disadvantaged areas, but were worried about what was going to happen when the money ran out. In other words, there were several initiatives at the provincial and municipal level with appropriate structures on the ground

to implement them successfully, but there was very little money to support them. Hence, instead of implementing the telecentre policy themselves, USAASA might have been better advised to follow its mandate as a financial institution and pay subsidies to other agencies that had more appropriate structures and capacities at the local level.

With respect to the market channel, a simplification of the regulatory framework and a significant increase in the capacity of the regulator, and specifically the compliance section, seems to be necessary in order to make this channel work in the interest of the poor. Indeed, more recent trends in the communication sector indicate that the sector is improving in these respects. At the time of my fieldwork the regulator was in a process of reviewing the USOs because the new Telecommunications Act argued that imposing different obligations on different operators was contrary to the objective of competition on equal terms. The government had attempted to increase the capacity of the regulator, but when I was undertaking my research there were still capacity problems in the compliance section.



## 9. REFERENCES

### 9.1 Secondary Literature

- Andersen, S.S. 1997. *Case Studier og Generalisering: Forskningsstrategi og Design*. Bergen: Fagbokforlaget
- Bayart, J.F. 1993. *The State in Africa: The Politics of the Belly*. London: Longman
- Benjamin, P. 2001a. *Telecentres and Universal Capability. A Study of the Telecentre Programme of the Universal Service Agency in South Africa 1996 -2000*. Aalborg: University of Aalborg. PhD dissertation.
- . 2001b 'Telecentres in South Africa'. *Journal of Development Communication: Special Issue on Telecenters* 12(2): 1-6.
- Bond, P. 2000. *Elite Transition: From apartheid to Neoliberalism in South Africa*. London and Sterling: Pluto Press
- Bratton, M. and N. van de Walle 1997. *Democratic Experiments in Africa: Regime Transitions in Comparative Perspective*. Cambridge: Cambridge University Press.
- Castells, M. 2000. *End of Millenium*. Volume 3 in *The Information Age, economy, society and culture*. Malden, Oxford, Melbourne, Berlin: Blackwell.
- Chabal, P. and J.P. Daloz 1999. *Africa Works. Disorder as a Political Instrument*. Oxford and Bloomington: James Currey.
- Christensen, T., P.Læg Reid, P.G Ronnes and K.A. Rønnes. 2007. *Organisasjonsteori for Offentlig Sektor*. Oslo: Universitetsforlaget
- CLIQ (Community based Learning; ICT and Quality of Life) 2008. *CLIQ Pre-Assessment Survey*. Durban: School of Development Studies. University of KwaZulu-Natal.
- Devey, R., C. Skinner and I. Valodia 2006. 'Second Best? Trends and Linkages in the Informal Economy in South Africa.'. *Development Policy Research Unit Working Paper*.
- Dunn, W.N. 2007. *Public Policy Analysis: An Introduction*. Upper Saddle River: Pearson.

- Dymond, A., S. Oestman, K. Whiting, C. Smithers, C Milne and R. Milne 2008. 'Module 4: Universal Access and Service' in *ITU-Info Dev ICT regulation Toolkit*. Accessed online at: <http://www.ictregulationtoolkit.org> on January 15<sup>th</sup> 2008.
- Esselaar, S. and A. Gillwald 2007. '2006 South African ICT Sector Performance Review.' *University of Witwatersrand Policy Research Paper 8*.
- Hill, M and P. Hupe 2009. *Implementing Public Policy*. London: Sage Publications.
- Hodge, J. 2003. 'Universal Service through Roll-out Targets and License Conditions: Lessons from Telecommunications in South Africa.' *Development Southern Africa* 1: 205-225.
- Hogwood, B.W and L.A. Gunn 1984. *Policy Analysis for the Real World*. Oxford: Oxford University Press.
- Horwitz, R.B. and W. Currie 2003. 'Another Instance where Privatization Trumped Liberalization: The Politics of Telecommunications Reform in South Africa – A Ten Year Retrospective.' *Telecommunications Policy* 8-9: 445-462
- Jreisat, J.E. 2002. *Governance and Developing Countries*. Leiden: Koninklijke Brill.
- Kjær, A.M. 2004. *Governance*. Cambridge: Polity Press
- Leibbrandt, M. and I. Woolard 1999. 'A Comparison of Poverty in South Africa's Nine provinces.' *Development Southern Africa* 1: 37-54.
- Makhaya, G. and S. Roberts 2003. 'Telecommunications in Developing Countries: Reflections from the South African Experience.' *Telecommunications Policy* 27: 41-59.
- Mamdani, M. 1996. *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism*. Princeton: Princeton University Press.
- Marais, H. 2001. *South Africa: Limits to Change: The Political Economy of Transition*. London and New York: Zed Books.
- May, P. 2003. 'Policy Design and Implementation.' In B.G. Guy and J. Pierre (eds) *Handbook of Public Administration*. London, Thousand Oaks and New Delhi: Sage Publications
- Marshall, C. and G.B. Rossman 1995. *Designing Qualitative Research*. Thousand Oaks, London and New Delhi: Sage Publications

- Mhone, G. And O. Edigheji 2003. *Governance in the New South Africa*. Cape Town: University of Cape Town Press.
- Mokate, R. 2000. 'Macro-economic Context.' In J. May (ed) *Poverty and Inequality in South Africa: Meeting the Challenge*. London and New York: Zed Books.
- May, J. 2000. 'Growth, Development, Poverty and Inequality'. In J. May (ed) *Poverty and Inequality in South Africa: Meeting the Challenge*. London and New York: Zed Books.
- Mazmanian, D. and P.A. Sabatier 1983. *Implementation and Public Policy*. Glenview: Scott, Foresman and Company.
- McDonald, D.A 2002. 'The Theory and Practice of Cost Recovery in South Africa'. In D.A. McDonald and J. Pape (eds): *Cost Recovery and the Crisis of Service Delivery in South Africa*. Cape Town: HSRC Press.
- Noll, R.G. 2000 Telecommunication Reform in Developing Countries. in A.O. Krueger (ed) *Economic Policy Reform*. Chicago: University of Chicago Press.
- Pape, J. and D.A. McDonald 2002. *Cost Recovery and the Crisis of Service Delivery in South Africa*. Cape Town: HSRC Press.
- Peters, G.B. 2001. 'The Politics of Tool Choice.' In Salamon, L.M (ed) *The Tools of Government. A Guide to the New Governance*. New York: Oxford University Press.
- Peters, G.B. and F.K.M van Nispen 1998. *Public Policy Instruments. Evaluating the Tools of Public Administration*. Cheltenham and Northhampton: Edward Elgar.
- Pierre, J. and B.G. Peters 2000. *Governance, Politics and the State*. Houndmills, Basingstoke, Hampshire and London: Macmillan Press ltd.
- Pressman, J.L and A.Wildawsky 1973. *Implementation*. London: University of California Press.
- Risse, T. and U. Lehmkuhl 2006. 'Governance in Areas of limited Statehood - New Modes of Governance?' *Research Program of the Research Centre SFB 700. Berlin Working Paper*.
- Salamon, L.M. 2001. 'The New Governance and the Tools of Public Action: An Introduction.' In L.M. Salamon, (ed). *The Tools of Government. A Guide to the New Governance*. New York: Oxford University Press.
- Terreblanche, S.J. 2003. *A History of Inequality in South Africa: 1652-2002*. Pietermaritzburg: University of Natal Press.

- Thompson, G.F. 2003. *Between Hierarchies and Markets: The logic and limits of Network Forms of Organisation*. New York: Oxford University Press.
- Van Meter, D.S. and C.E. Van Horn 1975. 'The policy Implementation Process: A conceptual Framework'. *Administration and Society* 6:445-88.
- Visser, W. 2004. 'Shifting RDP into GEAR: The ANC Government's Dilemma in Providing an Equitable System of Social Security for the New South Africa.' Paper presented at the 40th International Conference of Labour and Social History (ITH).
- Weber, M. 1978 [1968]. *Economy and Society. An Outline of Interpretative Sociology* (edited by G. Roth and C. Wittich). New York: Bedminster Press.
- Winter, S.C. 2003. 'Implementation Perspectives: Status and Reconsideration'. In G. Peter and J.Pierre (eds). *Handbook of Public Administration*. London, Thousand Oaks and New Dehli: Sage Publications.
- Yin, R.K. 2003. *Case Study Research: Design and Methods*. London, Thousand Oaks.

## 9.2 Official and Semi-Official Publications

- African National Congress (ANC) 1994. *The Reconstruction and Development Programme: A Policy Framework*. Accessed online at <http://www.anc.org.za/rdp/rdpall.html#2.8> on September 15<sup>th</sup> 2008.
- . 1955 'Freedom Charter' adopted at the Congress of the People, Kliptown on 26 June 1955. Accessed online at <http://www.anc.org.za/ancdocs/history/charter.html> on September 15<sup>th</sup> 2008.
- Department of Communications 2001 *Policy Directions Issued by the Minister of Communications*. General Notice 1756. Pretoria: Department of Communications.
- Department of Education 2004. *White Paper on E-education: Transforming Learning and Teaching through Information and Communication Technologies (ICTs)*. White Paper No 26734 of 26. August 2004. Pretoria: Government printers
- ICASA 2009. *Individual Electronic Communications Network Service License no 04555 granted to Broadband Infraco*. Pretoria: ICASA.

- . 2009b. *Measuring the Information Society: The ICT Development Index*. Geneva: International Telecommunication Union
- Mbeki, T. 2003 'State of the Nation Address of the President of South Africa'. Cape Town: Houses of Parliament.
- Ministry of Post, Telecommunications and Broadcasting 1996. *The White Paper on Telecommunication Policy*. White Paper no. 16995. Pretoria: Government Printers.
- Republic of South Africa 1996. *Telecommunications Act*. Act no. 103 adopted 12. November 1996. Cape Town; Government of South Africa.
- . 2001. *Telecommunications Amendment Act*. Act no. 64 adopted 29. November 2001. Cape Town: Government of South Africa.
- . 2002. *Electronic Communications and Transactions Act*. Act no. 25. Cape Town: Government of South Africa.
- . 2005. *Electronic Communications Act*. Act no. 36 adopted 11. April 2006. Cape Town: Government of South Africa.
- Sentech 2008. *Sentech Annual Report 2008*. Accessed online at [www.sentech.co.za/about/files/files/Sentech-Annual-Report-2008.pdf](http://www.sentech.co.za/about/files/files/Sentech-Annual-Report-2008.pdf) on 7th May 2009.
- Telkom official website 2010. Accessed online at [http://www.telkom.co.za/about\\_us/shareholding.html](http://www.telkom.co.za/about_us/shareholding.html) on February 10th 2010
- Universal Service and Access Agency of South Africa (USAASA). 1999. *Universal Access and Universal Service Discussion Paper*. General Notice 1114. Pretoria: USAASA.
- . 2005. *Guidelines for Applications and Awarding of Universal ICT access centres*. Pretoria: USAASA.
- . 2006. *Annual Report 2006/2007*. Pretoria: USAASA.
- . 2008a. *Annual Report 2007/2008: Creating Connections*. Pretoria: USAASA.
- . 2008b. *USAAASA Corporate Strategic Plan 2008/2009-2010/2011*. Pretoria: USAASA.

———. 2008c. *Contributing to South Africa's Growth. USAASA: Budget, Strategy, Plan and Priorities for 2008/2009*. Presentation to the Portfolio Committee: (Communications). Pretoria: USAASA.

———. 2008d. *Universal Access and Universal Service Discussion Paper*. General Notice 987. Pretoria: USAASA.

## 9.3 List of informants

<b>Nr.</b>	<b>Date</b>	<b>Title</b>	<b>Organisation</b>	<b>Place</b>
1.	27.10.2008	Telecentre Administrator	Adams Mission Telecentre	Adams Mission
2.	27.10.2008	Principal	Adams Mission Primary School	Adams Mission
3.	27.10.2008	Teacher	Dr Nembola High School	Adams Mission
4.	28.10.2008	Telecentre Assistant	Adams Mission Telecentre	Adams Mission
5.	28.10.2008	Principal	Sapomelela Primary School	Adams Mission
6.	28.10.2008	Assistant Telecentre Manager	Adams Mission Telecentre	Adams Mission
7.	28.10.2008	Teacher	Adams College	Adams Mission
8.	31.10.2008	Telecentre Manager	Inanda Digital Hub	Inanda
9.	31.10.2008	Principal	Amadhletu High School	Inanda
10.	02.11.2008	Provincial Representative	USAASA	Sicabazini
11.	03.11.2008	Senior Officer	Mbazwana Thusong Centre	Mbazwana
12.	04.11.2008	Manager	Sicabazini Community Centre	Sicabazini
13.	04.11.2008	Entrepreneur	Vodacom Phone Shop	Sicabazini
14.	04.11.2008	Entrepreneur	Vodacom Phone Shop	Sicabazini
15.	05.11.2008	Principal	Esibonisweni Primary School	Sicabazini
16.	05.11.2008	Teacher	Dumangeze High School	Sicabazini
17.	05.11.2008	Telecentre Manager 1	Sicabazini Telecentre	Sicabazini
18.	06.11.2008	Telecentre Manager 2	Sicabazini Telecentre	Sicabazini
19.	13.11.2008	Manager	Vuvuzela Communications	Durban
20.	13.11.2008	Principal	Langalilabele High school	Inanda
21.	13.11.2008	Teacher	Ochlange High School	Inanda
22.	13.11.2008	Technician and Trainer	Inanda Digital Hub	Inanda
23.	14.11.2008	Principal and Ward Councillor	Mandlakayise Primary School	Inanda
24.	14.11.2008	ICT Manager	KwaZuluNatal Department of Economic Development	Durban/ Pietermaritzburg.
25.	17.11.2008	Independent ICT Consultant	Strategy and Project Development Services	Phone
26.	18.11.2008	Manager	Provincial Department of Arts and Culture, Library Services	Pietermaritzburg
27.	18.11.2008	MST/ICT Manager	MST/ICT Section of the Provincial Department of Education	Pietermaritzburg
28.	18.11.2008	Master Student	Department of Economic	Durban

			History and Internet Studies, University of KwaZuluNatal	
29.	18.11.2008	Local Councillor	Adams Mission	Isipingo
30.	22.11.2008	ICT Coordinator	Pinetown District	Manor Gardens
31.	24.11.2008	ICT Manager	Umkhanyakude District Municipality	Mkuze
32.	25.11.2008	Computer Cadet (in charge of computer lab)	Manguzi Library	Manguzi
33.	25.11.2008	Chief Education Specialist and ICT Coordinator	Obonjeni District and Provincial Inter-district Committee	Manguzi
34.	25.11.2008	Local Councillor	Sicabazini	Manguzi
35.	25.11.2008	Local Economic Development Officer	Department of Economic Development, Umhlabuyalingala Municipality	Manguzi
36.	25.11.2008	LED Officer	Umhlabuyalingana Municipality	Manguzi
37.	28.11.2008	Deputy Chief Education Specialist and ICT Coordinator in Umlazi District	Umlazi School District	Umlazi
38.	28.11.2008	Head of Smart Project	Ethekweni Municipality	Durban
39.	29.11.2008	Deputy Chief Education Specialist ICT	Provincial Interdistrict ICT Committee	Durban
40.	29.11.2008	KZN Provincial Representative	USA/USAASA	Durban
41.	08.12.2008	Deputy Director General, ICT Policy Development	Department of Communication	Pretoria
42.	08.12.2008	Manager	PNC on ISAD	Pretoria
43.	09.12.2008	Head of the USF Fund	USA/USAASA	Pretoria
44.	09.12.2008	Head of Corporate Affairs	USA/USAASA	Pretoria
45.	03.07.2008	Compliance Manager	ICASA	Email

# 10. Appendices

## 1: Interview guides

### General interview guide to national and provincial bureaucrats<sup>14</sup>

#### **Intentions**

- A central intention in the legislative framework is to provide access among the poor, what is your agency doing to achieve this?
- Do you have a specific strategy?
- What are the specific targets and timeframes?

#### **Implementation structure**

- What is your agency doing in order to provide access to ICT in poor communities?
- Could you describe the organisational structure of this agency at the local, provincial and national level?
- How would you describe the relationship with the other central actors in the sector (ICASA, DoC and DoE)?

#### **Implementation process**

- When did you start to implement the policy?
- Has your agency changed in the aftermath of the 3 legislative reforms in the sector?
- Could you briefly describe how the different legislative reforms in the sector impacted on your agency's work?

#### **Results of the Policy**

- What has the channel achieved in terms of results?
- How many telecentres/cyberlabs in schools have you established/how many households have gotten a telephone because of the USOs and how many schools have been connected to the internet? /Where can I find information about this?
- How many of these are successful?
- Do you consider the implementation and the results of the policy a success? What have been the challenges?

#### **Confrontation with results on the ground**

- I have conducted a fieldwork in three poor communities in KwaZulu-Natal and there I found that the E-rate is not being implemented? Is this true? Why is it so? What are the challenges?
- I also found, that few schools had an internet connection despite the fact that this has been a key intention of the USOs. Why is this so?
- I also found that few households had access to a fixed line phone in the dwelling. Why?
- The implementation of the USOs on the cellphone companies seemed to have been relatively successful. Why is this?
- I also found that only two of the three telecentres I visited were successful. Why do you think this is? What has been the challenges?
- I also found that many of the schools had computerlab that were working relatively well and trained teachers. Why is this so?

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<sup>14</sup> This was the general interview guide used to interview all the bureaucrats at the national level, but certain questions were modified depending on the role of the agency that the informant represented.



## Interview guide to telecentre managers

### History

- When was the telecentre established?
- Has it been open since then?
- How long have you been here?

### Actors

- Who brought the computers?
- Who do you turn to if you have a technical problem?
- What is the role of USAASA for the telecentre? What does it provide?
- Do you receive any support from other organisations or people?

### Operation

- Do you receive a salary? (how?/from who?)
- Have you received training? (from who?)
- Does the centre make a profit? (why not?)

### Equipment

- How many computers do you have and how many of them are working?
- Do you have an internet connection?

### Services and usage

- What kind of services do you offer to the community?
- Do you organize any training courses? (If yes, to whom? How many per week?)
- What kind of people uses the different services?
- Approximately how many people use the centre a day?

### Success and challenges

- Would you consider the telecentre to be successful? (why not?)
- What are the main challenges for the centre today

## Interview guide to teachers in schools

### Equipment, E-rate and training

- Does this school have a computer for administrative purposes?
- Does it have a computer lab?
- Is the computer lab connected to the internet?
- In 2001, the government decided that all public schools should get a 50% E-rate discount on their internet services. Have you heard about this? Does your school receive a 50% discount on your internet services?
- Have any of the teachers in this school been trained by the Department of Education?

### History

- When did you receive the computerlab? Who delivered it?
- And the internet connection? From who?

### Operation

- Who pays for the maintenance of the computers? Repairs?
- Are the computers insured?
- Have you receive any training or support from other actors?

### Usage

- Is the computerlab used in teaching? In which subjects?
- Is it open to other people after school?

### Challenges

- What are the major challenges with the computerlab?

